Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06.10.97 : ISO 4113

Combination No. : 0 402 066 712

Injection pump

Pump designation : PES6P12OA12ORS3358 EP type number : 0 412 026 784

Governor

Governer design. : RSV475...1200P2A675

Governer no. : 0 421 833 594

Cust. part No. : 3283573

Customer-spec. information

Customer : CDC
Motor : 68TA-59U ELITE

Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0 40

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 100 Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 bar

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: **←** 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 7.75

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

	1
Rack travel in mm : 11.30 Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 140.0	Rated speed rpm : 1200 Aneroid pressure
Tolerance	hPa : 1500 Del. quantity
cm3/1000 strokes : + 1.0	- cm3/1000 strokes : 140.0 - Tolerance
Check tolerance cm3/1000s. : + 3.0	cm3/1000 strokes : + 1.0 Check tolerance
Spreed	- cm3/1000s. : + 3.0 - Spreed - Tolerance
Tolerance cm3/1000 strokes : 4.0	- cm3/1000 strokes : 4.0 - Check tolerance - cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	
	CONTROL LEVER
Rated speed rpm : 475	t - control lever - position degree : 104.0
Rack travel in mm: 5.30 Tolerance mm: + 0.10 Del. quantity	tolerance degree : +- 4.0 + RATED SPEED
cm3/1000 strokes : 21.0 Tolerance	rack travel mm : 10.30 Rated speed rpm : 1265
cm3/1000 strokes : +- 2.0 Check tolerance	Tolerance 1/min : +- 5
cm3/1000s. : + 4.5 Spreed Tolerance	+ rack travel mm : 4.00 + Rated speed rpm : 1345 + Tolerance 1/min : +- 15
cm3/1000 strokes : 6.0 Check tolerance	+ rack travel mm : 0.85
cm3/1000s. : 9.0	Tolerance mm : + 0.55 Rated speed rpm : 1475
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1355 Tolerance 1/min : 15
GUIDE SLEEVE POSITION	<u> </u>
control lever position degree : - 3	LOW IDLE
Rated speed rpm : 800	control lever position degree : 82.0
Rack travel in mm: 0.50 Tolerance mm: + 0.20	tolerance degree : + 4.0 Setting point w/out bumper spring
governor spring pre-tension	Rated speed rpm : 485
click setting x : 3.50	rack travel mm : 4.80 Toterance mm : + 0.10
	•

T	e	S	t	i	•	ng	1:

Rated speed rpm : 485 rack travel mm : 5.30 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 605
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1200 rack travel mm : 11.30 Tolerance mm : + 0.05

Rated speed rpm : 750 rack travel mm : 11.30 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.30
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : rack travel mm : 9.00
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 900 rack travel mm : 10.90 Tolerance mm : + 0.20

Pressure hPa : 560 rack travel mm : 9.55 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500 Rated speed rpm : 750

Del. quantity

cm3/1000 strokes : 157.0

Tolerance cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000S. Spreed	: +-	6.0
Tolerance cm3/1000 strokes	:	8.0

Check tolerance cm3/1000S. : 12.0

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 97.0

Tolerance 77.0

cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm3/1000 strokes : 170.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance

cm3/1000s. : + 25.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.30
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 21.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000s. : + 4.5

Spreed Tolerance

cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.10.97 Test oil : ISO 4113

Combination No. : 0 402 640 817

Injection pump

Pump designation : PE12P12OA52OLS7826 EP type number : 0 412 620 817

Governor

Governer design. : RQV350...1150PA870

: -4

Governer no. : 0 421 813 717

Cust. part No. : 0180745402

Customer-spec. information Customer : MB-NFZ Motor : OM 444 Motor : 0M 444 LA Power KW : 736.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 160 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm: 20.00 Tolerance mm : +- 1.00

Firing order : 12-1-5-9-8

: - 3- 4- 11- 10 : - 2- 6- 7

Phasing : 0-45-60-105-120

: -165-180-225-240 : -285-300-345

: **←** 0.50 Tolerance

Check

tolerance *NW : + 0.75

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm: 15.30 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 306.0	- Tolerance mm : +- 0.25 - - Rated speed rpm : 1291
Tolerance cm3/1000 strokes : + 1.0	- Rated speed rpm : 1291 - guide sleeve - travel mm : 10.05 - Tolerance mm : + 0.25
Check tolerance cm3/1000s. : +- 4.0	- GUIDE SLEEVE POSITION
Spreed	
Tolerance cm3/1000 strokes : 6.0	- control lever - position degree : - 1 - Rated speed rpm : 1275
Check tolerance cm3/1000s. : 10.0	Rack travel in mm : 16.50 Tolerance mm : +- 1.30
Rated speed rpm : 350	- FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 5.60	- Rated speed rpm : 1150
Tolerance mm : + 0.10 + Del. quantity +	- Aneroid pressure - hPa : 1300
cm3/1000 strokes : 15.0 + Tolerance +	- Del. quantity - cm3/1000 strokes : 306.0
cm3/1000 strokes : + 3.0	- Tolerance
Check tolerance + 6.0 +	- cm3/1000 strokes : + 1.0 - Check tolerance
Spreed Tolerance	- cm3/1000s. : +- 4.0 - Spreed
cm3/1000 strokes : 8.0	- Tolerance
Check tolerance + cm3/1000S. : 12.0 +	- cm3/1000 strokes : 6.0 - Check toleranse
+	cm3/1000s. : 10.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	- CONTROL LEVER
GUIDE SLEEVE TRAVEL	- - control lever
	- position degree : 117.0
Rated speed rpm : 1206 + guide sleeve +	- tolerance degree : +- 4.0 -
travel mm : 8.15	- RATED SPEED
Tolerance mm : + 0.15	- rack travel mm : 14.30 - Rated speed rpm : 1195
Rated speed rpm : 350 guide sleeve	Tolerance 1/min : + 5
travel mm : 1.55	rack travel mm : 4.00
Tolerance mm : + 0.20	- Rated speed rpm : 1285 - Tolerance 1/min : +- 15
Rated speed rpm : 600	
guide sleeve + travel mm : 3.55 +	- rack travel mm : 0.50 - Tolerance mm : +- 0.50
Tolerance mm : + 0.25	- Rated speed rpm : 1350
Rated speed rpm : 960	
guide sleeve travel mm : 5.55	- -

LOW IDLE	
control lever position degree tolerance degree	: 66.0 : ← 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 250
CRT mm min.	: > 7.30
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.60 : ← 0.10
Rated speed rpm	: 475
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1150 : 15.30 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 15.30 : ← 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1300 : 15.40 : +- 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 8.45 : + 0.15
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 300 : 10.20 : ← 0.05
Pressure hPa rack travel mm	: 700 : 13.80

Tolerance mm	: +- 0.15
Start interlock	
Rated speed rpm Rated speed rpm	: > 200 : < 310
Check speed 1/min Check	: > 180
speed 1/min	: < 330
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	: 1300
Rated speed rpm Del. quantity	: 750
cm3/1000 strokes Tolerance	: 313.0
cm3/1000 strokes Check tolerance	: + 5.0
cm3/1000S. Spreed	: +- 8.0
Tolerance cm3/1000 strokes Check tolerance	: 10.0
cm3/1000s.	: 15.0
Aneroid pressure	. 1700
hPa Rated speed rpm Del. quantity	: 1300 : 1150
cm3/1000 strokes Tolerance	: 234.5
cm3/1000 strokes Check tolerance	: + 1.5
cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes Check tolerance	: 10.0
cm3/1000s.	: 15.0
Aneroid pressure	
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 124.0
cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000S. Spreed	: +- 4.0

Tolerance

cm3/1000 strokes : 10.0

Check tolerance cm3/1000s. 15.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 331.0

Tolerance

cm3/1000 strokes : \leftarrow 10.0

Check tolerance

cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.60

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 strokes : \leftarrow 3.0

Check tolerance

cm3/1000s.

: **←** 6.0 Spreed

Tolerance

8.0 cm3/1000 strokes :

Check tolerance

12.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06.10.97 : ISO 4113

Combination No. : 0 402 646 679

Injection pump

Pump designation : PE6P120A320RS7447Z

EP type number : 0 412 626 969

Governor

Governer design. : RQ275/1150PA1361

Governer no. : 0 421 801 825

Cust. part No. : 1329610

Customer-spec. information Customer : DAF

: GS 160 Motor Power KW : 160.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

: **←** 0.1 Tolerance bar

Overflow quantity

min. l/h : 145 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 5.25 : +- 0.05 Tolerance mm

Check

: ÷- 0.10 tolerance mm

Rack travel in mm : 10.60

Tolerance mm : +- 0.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

: + 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : \leftarrow 0.10

Check

tolerance °NW : **←** 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 10.60

Tolerance mm : + 0.05

	4	- guide sleeve
Del. quantity	-	travel mm : 4.57
cm3/1000 strokes	: 154.0	Tolerance mm : + 0.10
Tolerance		- Rated speed rpm : 440
cm3/1000 strokes	: ← 1.0	guide sleeve
Charl talanana		travel mm : 6.00
Check tolerance cm3/1000s.	: + 4.0	- Tolerance mm : +- 0.10
CIIO/ (DCDS.	1.5	Rated speed rpm : 1360
Spreed		guide steeve
	<u>.</u>	- travel mm : 11.50
Tolerance	+	Tolerance mm : + 0.50
cm3/1000 strokes	: 5.0	
Check tolerance	2	GUIDE SLEEVE POSITION
cm3/1000s.	: 9.0	
		- - control lever
		- position degree : - 1
Rated speed rpm	: 275	Rated speed rpm : 600
The second second second		, , , , , , , , , , , , , , , , , , ,
Rack travel in mm		Rack travel in mm : 16.00
Tolerance mm	: + 0.10	Tolerance mm : + 0.40
Del. quantity	+	-
cm3/1000 strokes	: 24.0	
Tolerance	: +- 3.0	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes Check tolerance	: +- 3.0	- Rated speed rpm : 1000
cm3/1000s.	: ← 6.0	- Rated speed rpm : 1000 - Aneroid pressure
Spreed		hPa : 1000
Tolerance	_	Del. quantity
cm3/1000 strokes	: 8.0	- cm3/1000 strokes : 154.0
Check tolerance	+	- Tolerance
cm3/1000s.	: 12.0	- cm3/1000 strokes : $+$ 1.0
	+	- Check tolerance
(2)		cm3/1000s. : +- 4.0
(B) SETTING OF IN	JECTION PUMP	Spreed
WITH GOVERNOR	1	- Tolerance - cm3/1000 strokes : 5.0
		Check tolerance
GUIDE SLEEVE TRAV	/FI	- cm3/1000s. : 9.0
30252 322272	-	-
Rated speed rpm	: 1202	-
guide steeve	-	
travel mm	: 6.51	CONTROL LEVER
Tolerance mm	: + 0.15	
Dutad amand man	. 275	control lever
Rated speed rpm	: 275	- position degree : 97.0 - tolerance degree : +- 4.0
guide sleeve travel mm	: 2.08	toterance degree : +- 4.0
Tolerance mm	: + 0.20	RATED SPEED
. Occi arioc mm		rack travel mm : 9.60
Rated speed rpm	: 1150	- Rated speed rpm : 1202
guide sleeve	+	- Tolerance 1/min : + 8
travel mm	: 6.00	
Tolerance mm	: ← 0.10	rack travel mm : 4.00
District	. 755	Rated speed rpm : 1275
Rated speed rpm	: 355	- Tolerance 1/min : +- 15
	7	

rack travel mm : 0.70 Tolerance mm : + 0.70 Rated speed rpm : 1450 LOW IDLE control lever position degree : 74.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 175 CRT mm min. : > 6.50 Testing: Rated speed rpm : 275 rack travel mm : 5.05 Tolerance mm : +- 0.10 rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : + 20 TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 10.60 Tolerance mm : + 0.05 Rated speed rpm : 1150 rack travel mm : 10.60 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 600 Pressure hPa : 1000 rack travel mm : 10.60 rack travel mm : Tolerance mm : + 0.05 Rated speed rpm : 600 Pressure hPa : - rack travel mm : 6.75

: +- 0.10

Pressure hPa : 175
rack travel mm : 9.70
Tolerance mm : + 0.05

Pressure hPa : 80
rack travel mm : 7.50
Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 101.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 4.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.05
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 24.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

End of test specification sheet

Tolerance mm

Rated speed rpm : 600

MEASUREMENT

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 07.10.97 : ISO 4113

Combination No. : 0 402 648 812M

Injection pump

Pump designation : PE8P120A320LS7801

: -10

EP type number : 0 412 628 851

Governor

Governer design. : RQ300/1050PA717

Governer no. : 0 421 801 258

Cust. part No. :

Customer-spec. information

Motor

: 0M442 LA

Power KW

: 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity

min. L/h : 110 Tolerance L/h : + 10.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

A11

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter:

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 20.50

Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

: ← 0.50 Tolerance

Check

tolerance *NW : +- 0.75

Start of delivery mark

Tolerance

: +- 0.10

Check

tolerance *NW

: +- 0.75

Barrel no. :

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.10

Tolerance mm : \leftarrow 0.10

	+ guide sleeve
Del. quantity	+ travel mm : 6.05
cm3/1000 strokes : 223.0	Tolerance mm : +- 0.05
Tolerance	Rated speed rpm : 1150
cm3/1000 strokes : +- 1.0	guide sleeve
tms/ 1000 3tf 0xc3	travel mon : 9.45
Check tolerance	+ Tolerance mm : + 0.15
cm3/1000s. : +- 4.0	T Total Ite link . + 0.15
CH3/10003 +- 4.0	T
Canad	CHINE CLEENE DOCUTION
Spreed	+ GUIDE SLEEVE POSITION
Televene	T
Tolerance	
cm3/1000 strokes : 7.0	+ control lever
	+ position degree : 109
Check tolerance	+ Rated speed rpm : 600
cm3/1000s. : 10.0	+
	+ Rack travel in mm : 20.00
	+ Tolerance mm : +- 0.80
	+
Rated speed rpm : 300	
	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 6.40	+
Tolerance mm : \leftarrow 0.10	+ Rated speed rpm : 1050
Del. quantity	+ Aneroid pressure
cm3/1000 strokes : 19.0	+ hPa : -
Tolerance	Del. quantity
cm3/1000 strokes : +- 3.0	- cm3/1000 strokes : 223.0
Check tolerance	+ Tolerance
cm3/1000s. : +- 6.0	cm3/1000 strokes : +- 1.0
	+ Check tolerance
Spreed	
Tolerance 5.0	5
cm3/1000 strokes : 5.0	Spreed
Check tolerance	+ Tolerance
cm3/1000s. : 8.0	+ cm3/1000 strokes : 7.0
	+ Check tolerance
	+ cm3/1000s. : 10.0
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	+
	+
	+ CONTROL LEVER
GUIDE SLEEVE TRAVEL	+
	+ rontrol lever
Rated speed rpm : 1000	+ position degree : 101.0
guide sleeve	+ tolerance degree : +- 4.0
travel mm : 6.25	1
Tolerance mm : + 0.05	+ RATED SPEED
	rack travel mm : 14.20
Rated speed rpm : 300	Rated speed rpm : 1092
guide sleeve	+ Tolerance 1/min : + 8
travel mm : 2.90	
Tolerance mm : + 0.10	rack travel mm : 4.00
roter differential . F- 0.10	Rated speed rpm : 1150
Roted appeal now . 000	the state of the s
Rated speed rpm : 900	+ Tolerance 1/min : + 15
guide sleeve	7
travel mm : 6.15	rack travel mm : 0.75
Tolerance mm : + 0.05	+ Tolerance mm : + 0.75
	+ Rated speed rpm : 1300
Rated speed rpm : 600	+
	+

LOW IDLE control lever position degree : 76.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 200 : > 7.50 CRT mm min. Testing: Rated speed rpm 300 rack travel mm 6.40 : + 0.10 Tolerance mm rack travel mm 2.00 Rated speed rpm : 399 Tolerance 1/min : + 20 TORQUE CONTROL 1050 Rated speed rpm : 15.10 rack travel mm : Tolerance mm : + 0.10Rated speed rpm : 850 rack travel mm : 15.40 : + 0.15 Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING 500 Rated speed rpm : Pressure hPa 1000 MEASUREMENT 400 Pressure hPa 1.20 rack travel mm : + 0.10Tolerance mm Pressure hPa 600 2.90 rack travel mm : + 0.10 Tolerance mm

speed 1/min : < 240 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 850 Rated speed rpm Del. quantity cm3/1000 strokes : 232.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s.: +-5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. 10.0 Aneroid pressure hPa 500 Rated speed rpm : Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s.4.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s.10.0 STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 210.0 Tolerance cm3/1000 strokes : + 10.0Check tolerance : + 14.0 cm3/1000s. LOW IDLE Rated speed rpm : 300

Check

Check

speed 1/min :>

80

Start interlock

Rated speed rpm

Rated speed rpm : <

100

220

; >

Rack travel in mm Tolerance mm	:	+-	6.40 0.10
Del. quantity cm3/1000 strokes Tolerance	:		19.0
cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1 00 0S. Spre <i>e</i> d	:	+-	6.0
Tolerance cm3/1000 strokes Check tolerance	:		5.0
cm3/1000s.	:		8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 31.05.95 Test oil : ISO 4113

Combination No. : 0 402 676 840

Injection pump

Pump designation : PE6P12OA32OLS7854 EP type number : 0 412 626 971

Governor

Governer design. : RSV550...1050P0A826

: -9

Governer no. : 0 421 833 608

Cust. part No. : 0250746302

Customer—spec. information Customer : MB—NFZ Motor : OM 441 LA Power KW : 239.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. t/h : 115
Tolerance l/h : ← 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 20.50

Tolerance mm : +- 0.50

Firing order : 6-3-5-2-4-

: 1

Phasing : 0-60-120-180-240

: -300

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.60 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 224.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance : +- 4.0 Spreed
Tolerance cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s. : 9.0
CONTROL LEVER
control lever position degree : 88.0 tolerance degree : +- 4.0
ASSEMBLY GOVERNOR SETTING
Rated speed rpm : 1090 rack travel mm : 12.60
Rated speed rpm : 1124 Tolerance 1/min : + 4 rack travel mm : 4.00
rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
Rated speed rpm : 1091 rack travel mm : 12.60
Rated speed rpm : 1125 Tolerance 1/min : +- 4 rack travel mm : 4.00
rack travel nm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
Rated speed rpm : 1092 rack travel mm : 12.60
Rated speed rpm : 1126 Tolerance 1/min : + 4 rack travel mm : 4.00
rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
Rated speed rpm : 1093 rack travel mm : 12.60 Rated speed rpm : 1127 Tolerance 1/min : +- 4

rack travel mm	
rack travel mm Tolerance mm	: 0.85 : +- 0.55
Rated speed rpm	
Rated speed rpm rack travel mm	: 1094 : 12.60
Rated speed rpm Tolerance 1/min	: 1128 : +- 4
rack travel mm	: +- 4 : 4.00
rack travel mm	: 0.85
Tolerance mm Rated speed rpm	: 0.85 : ← 0.55 : 1300
rated speed this	. 1500
rack travel mm	: 12.60
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: 0.85 : +- 0.55
LON IDLE	
control layer	
control lever position degree	: 67.0
control lever position degree tolerance degree	: 67.0 : +- 4.0
position degree	: +- 4.0
position degree tolerance degree	: +- 4.0 out bumper spring
position degree tolerance degree Setting point w/o	: +- 4.0 out bumper spring
position degree tolerance degree Setting point w/o Rated speed rpm	: +- 4.0 out bumper spring : 450
position degree tolerance degree Setting point w/c Rated speed rpm CRT mm min. Testing:	: +- 4.0 out bumper spring : 450 : > 8.50
position degree tolerance degree Setting point w/c Rated speed rpm CRT mm min. Testing:	: +- 4.0 out bumper spring : 450 : > 8.50
position degree tolerance degree Setting point w/o Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm Tolerance mm	: +- 4.0 but bumper spring : 450 : > 8.50 : 550 : 3.90 : +- 0.10
position degree tolerance degree Setting point w/o Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm Tolerance mm	: +- 4.0 out bumper spring : 450 : > 8.50 : 550 : 3.90 : +- 0.10 : 2.00
position degree tolerance degree Setting point w/o Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm Tolerance mm	: +- 4.0 out bumper spring : 450 : > 8.50 : 550 : 3.90 : +- 0.10 : 2.00 : 565
position degree tolerance degree Setting point w/o Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm	: +- 4.0 out bumper spring : 450 : > 8.50 : 550 : 3.90 : +- 0.10 : 2.00 : 565 : +- 20
position degree tolerance degree Setting point w/o Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm Tolerance 1/min	: +- 4.0 out bumper spring : 450 : > 8.50 : 550 : 3.90 : +- 0.10 : 2.00 : 565 : +- 20 RY SPRING
position degree tolerance degree Setting point w/o Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm Tolerance 1/min SET IDLE AUXILIAR	: +- 4.0 out bumper spring : 450 : > 8.50 : 550 : 3.90 : +- 0.10 : 2.00 : 565 : +- 20 RY SPRING
position degree tolerance degree Setting point w/o Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm Tolerance 1/min SET IDLE AUXILIAN rack travel mm	: +- 4.0 out bumper spring : 450 : > 8.50 : 550 : 3.90 : +- 0.10 : 2.00 : 565 : +- 20 RY SPRING : 2.00
position degree tolerance degree Setting point w/o Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm Tolerance 1/min SET IDLE AUXILIAR rack travel mm	: +- 4.0 out bumper spring : 450 : > 8.50 : 550 : 3.90 : +- 0.10 : 2.00 : 565 : +- 20 RY SPRING : 2.00

Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm	: 14.20 : +- 0.10
Aneroid pressure	
hPa	: -
Rated speed rpm	: 750
Del. quantity	
cm3/1000 strokes Tolerance	: 247.0
cm3/1000 strokes	: +- 3.0
Check tolerance	
cm3/1000s.	: +- 6.0
Spreed Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000S.	: 12.0
STARTING FUEL DEL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100
LOW IDLE	
Rated speed rpm	: 550
Rack travel in mm	: 3.90 : + 0.10
Tolerance mm Del. quantity	· + 0.10
cm3/1000 strokes	: 19.0
Tolerance cm3/1000 strokes	: + 3.0
Check tolerance	. - J.U
cm3/1000s.	: - 6.0
Spreed	
Tolerance cm3/1000 strokes	: 6.0

Check tolerance cm3/1000s.	:	10.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.97 Test oil : ISO 4113

Combination No. : 0 402 736 884

Injection pump

Pump designation : PES6P120A720/3LS7251

: -1

EP type number : 0 412 726 926

Governor

Governer design. : RQV300...1000PA962

: -12K

Governer no. : 0 421 815 407

Cust. part No. : 3-7399

Customer—spec. information

Customer : MAN
Motor : D2866LF09

Power KW : 309.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 15.50 Tolerance mm : +- 0.50

Firing order : 6-2-4-1-5-

: 3

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : \leftarrow 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 6

	+ Tolerance mm : +- 0.25
BASIC SETTING	Rated speed rpm : 764 guide sleeve
Rated speed rpm : 900	travel mm : 6.96
	Tolerance mm : +- 0.25
Rack travel in mm : 13.95 Tolerance mm : + 0.05	Rated speed rpm : 305 guide sleeve
1000.01100.000	travel mm : 1.88
Del. quantity cm3/1000 strokes : 294.0	Tolerance mm : + 0.25
Tolerance	Rated speed rpm : 355
cm3/1000 strokes : + 1.0	+ guide sleeve + travel mm : 2.53 + Tolerance mm : + 0.25
Check tolerance	+
cm3/1000s. : + 4.0	+ Rated speed rpm : 470
Canada	guide sleeve
Spreed	+ travel mm : 3.67 + Tolerance mm : + 0.25
Tolerance	Total ance min . ~ 0.25
cm3/1000 strokes : 10.0	Rated speed rpm : 1260
	+ guide steeve
Check tolerance	+ travel mm : 13.50
cm3/1000s. : 14.0	+ Tolerance mm : + 0.50
	<u> </u>
	GUIDE SLEEVE POSITION
Rated speed rpm : 300	
Rack travel in mm: 5.20	control lever
Rack travel in mm : 5.20 Tolerance mm : +- 0.10	control lever position degree : - 1
Tolerance mm : +- 0.10 Del. quantity	
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0	position degree : - 1 Rated speed rpm : 1120
Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0	position degree : - 1 Rated speed rpm : 1120
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : + 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : + 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : + 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : + 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : +- 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 294.0
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : +- 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0 (B) SETTING OF INJECTION PUMP	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : +- 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 294.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : +- 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 294.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0 (B) SETTING OF INJECTION PUMP	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : +- 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 294.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : +- 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 294.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1061	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : +- 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 294.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 10.0
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : +- 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 294.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1061 guide sleeve	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : + 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 294.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1061 guide sleeve travel mm : 10.46 Tolerance mm : + 0.25	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : + 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 294.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1061 guide sleeve travel mm : 10.46 Tolerance mm : + 0.25 Rated speed rpm : 300	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : +- 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 294.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. : 14.0
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1061 guide sleeve travel mm : 10.46 Tolerance mm : + 0.25	position degree : - 1 Rated speed rpm : 1120 Rack travel in mm : 12.50 Tolerance mm : +- 2.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 294.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance

		+
control lever position degree tolerance degree		ANEROID/ALTITUDE COMPENSATOR TEST
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min		SETTING Rated speed rpm : 900
rack travel mm Rated speed rpm Tolerance 1/min		+ Pressure hPa : 1300 + rack travel mm : 13.95 + Tolerance mm : + 0.05
rack travel mm Tolerance mm Rated speed rpm	: ← 0.50	Rated speed rpm : 900 Pressure hPa : - rack travel mm : 9.10 Tolerance mm : - 0.10
		MEASUREMENT
LOW IDLE		- Rated speed rpm : 900
control lever	: 252.0	Pressure hPa : 720 rack travel mm : 11.90 Tolerance mm : + 0.20
tolerance degree		Pressure hPa : 220 rack travel mm : 9.45
Setting point w/o	out bumper spring	Tolerance mm : + 0.05
Rated speed rpm	: 200	Start interlock
CRT mm min.	: > 6.70	Rated speed rpm : > 100
Testing:		Rated speed rpm : < 240
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm	: 5.20 : + 0.10	Check speed 1/min :> 80 Check speed 1/min : < 260
Rated Speed Ipili	. 330	EUE DEL TUEDY CHADACTEDICTICS
TORQUE CONTROL Rated speed rpm	: 900	FUEL DELIVERY CHARACTERISTICS
rack travel mm Tolerance mm	: +- 0.05	Aneroid pressure hPa : 1300 Rated speed rpm : 1000
Rated speed rpm rack travel mm Tolerance mm		Del. quantity cm3/1000 strokes : 269.0 Tolerance
Rated speed rpm rack travel mm Tolerance mm		cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0
Rated speed rpm rack travel mm Tolerance mm	: 6.50	Aneroid pressure hPa : 1300 Rated speed rpm : 750

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 287.0 : + 3.0 : + 6.0
Aneroid pressure hPa	: -
Rated speed rpm Del. quantity	: 750
cm3/1000 strokes Tolerance	: 107.0
cm3/1000 strokes Check tolerance	: +- 5.0
cm3/1000s. Spreed	: +- 8.0
Tolerance cm3/1000 strokes Check tolerance	: 10.0
cm3/1000s.	: 14.0
Aneroid pressure	• _
Rated speed rpm	500
Del. quantity cm3/1000 strokes	: 169.0
Tolerance cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000s.	: ← 4.0
STARTING FUEL DEL	IVERY
Del. quantity cm3/1000 strokes	: 210.0
Tolerance cm3/1000 strokes	
Check tolerance cm3/1000s.	: + 19.0
LOW IDLE	
Rated speed rpm	: 300
Rack travel in mm Tolerance mm	5.20 : + 0.10
Del. quantity cm3/1000 strokes	: 32.0
Tolerance cm3/1000 strokes Check tolerance	: ← 3.0

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

End of test specification sheet

A22

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 19.05.88 : ISO 4113

Combination No. : 0 403 446 169

Injection pump

Pump designation : PES6MW100/720RS1131

EP type number : 0 413 406 123

Governor

Governer design. : RQV300...1300MW68

Governer no. : 0 420 083 101

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ : OM 366 LA Motor

Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 1.5 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.75 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : \leftarrow 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

: ← 0.50 Tolerance

Check

tolerance "NW : +- 0.75

BASIC SETTING

Del. quantity

cm3/1000 strokes : 98.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : + 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 6.0

,	
1	Aneroid pressure
Rated speed rpm : 300	hPa : 700
Rated speed rpm : 300	Del. quantity cm3/1000 strokes : 98.0
Rack travel in man: 5.95	F Tolerance
Toterance mm : + 0.05	cm3/1000 strokes : +- 1.0
Del. quantity	- Check tolerance
cm3/1000 strokes : 11.0	- cm3/1000s. : +- 3.0
Tolerance -	Spreed
cm3/1000 strokes : + 2.0	- Tolerance
Check tolerance	cm3/1000 strokes : 3.5
cm3/1000s. : +- 4.0	Check tolerance
Spreed	cm3/1000s. : 6.0
Tolerance - cm3/1000 strokes : 3.5	
Check tolerance	
cn3/1000s. : 5.5	CONTROL LEVER
. 3.3	CONTROL LEVER
	control lever
(B) SETTING OF INJECTION PUMP	position degree : 120.0
WITH GOVERNOR	tolerance degree : + 4.0
+	-
	RATED SPEED
GUIDE SLEEVE TRAVEL	rack travel mm : 10.90
700	Rated speed rpm : 1345
Rated speed rpm : 300	Tolerance 1/min : +- 5
guide sleeve travel mm : 1.05	rack travel mm : 4.00
Tolerance mm : + 0.25	Rated speed rpm : 4.00
Total ance (iii)	Tolerance 1/min : +- 15
Rated speed rpm : 1350	10ter arice 17 mm
guide sleeve	rack travel mm : 0.50
travel mm : 8.50	Tolerance mm : + 0.50
Tolerance mm : + 0.10	Rated speed rpm : 1550
+	-
Rated speed rpm : 1450	
guide sleeve	
travel mm : 9.50	LOU TOLE
Tolerance mm : +- 0.20 -	LOW IDLE
Rated speed rpm : 600	
guide sleeve	control lever
travel mm : 4.20	position degree : 81.0
Tolerance mm : + 0.30	tolerance degree : + 4.0
-	-
	Setting point w/out bumper spring
GUIDE SLEEVE POSITION	
+	- Rated speed rpm : 100
, J.,	
control lever	CRT mm min. : > 7.60
position degree : - 1 Rated speed rpm : 1350	Tooting
rateu speed rpm : 1550	Testing:
Rack travel in mm: 16.50	Rated speed rpm : 300
Tolerance mm : + 1.30	rack travel mm : 5.95
	Tolerance mm : + 0.05
FULL LOAD DELIVERY AT FULL LOAD STOP	
_i	L

Rated speed rpm : 1300

ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 700 : 11.95 : ← 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 10.15 : + 0.05
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 225 : 11.65 : ← 0.15
Pressure hPa rack travel mm Tolerance mm	: 170 : 10.45 : ← 0.05
Start interlock	
Rated speed rpm Rated speed rpm	
Check speed 1/min Check	; > 80
speed 1/min	: < 250
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: 700 : 600
Del. quantity cm3/1000 strokes	: 84.5
Tolorance	
Tolerance cm3/1000 strokes Check tolerance	: + 1.5
cm3/1000 strokes Check tolerance cm3/1000S. Spreed	: + 1.5 : + 4.0
cm3/1000 strokes Check tolerance cm3/1000s.	

Aneroid pressure hPa	:	_	
Rated speed rpm	:	500	
Del. quantity cm3/1000 strokes Tolerance	:	53.0	
cm3/1000 strokes Check tolerance	: +-	1.0	
cm3/1000s.	: +-	3.0	
STARTING FUEL DEL	LVERY		
Del. quantity			
cm3/1000 strokes Tolerance	•	88.0	
cm3/1000 strokes	: +-	5.0	
Check tolerance cm3/1000S.	: +-	8.0	
LOW IDLE			
Rated speed rpm	:	300	
Rated speed rpm Rack travel in mm Tolerance mm		5.95	
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: +-	5.95	
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1090 strokes	: +-	5.95 0.05	
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +-	5.95 0.05 11.0	
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: +	5.95 0.05 11.0	
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: +	5.95 0.05 11.0 2.0 4.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.08.92 : ISO 4113

Combination No. : 0 403 474 010

Injection pump

Pump designation : PES4MW100/720RS1127

EP type number : 0 413 404 103

Governor

Governer design. : RSV350...750MW0A336

: -5

: 0 420 085 164 Governer no.

Cust. part No. :

Customer-spec. information : MB-NFZ Customer Motor : 0M364A Power KW : 84.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1!!!!!

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 2.5 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

: 3.75 Prestroke mm : ← 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : ← 0.50

Check

tolerance "NW : **←** 0.75

BASIC SETTING

Del. quantity cm3/1000 strokes : 96.0

Tolerance

cm3/1000 strokes : \leftarrow 1.0

Check tolerance cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. 6.0 :

Rated speed rpm : 350	tolerance degree : +- 4.0
Rack travel in mm: 7.60 Tolerance mm: : + 0.30	RATED SPEED
Del. quantity	rack travel mm : 0.85
cm3/1000 strokes : 11.0 + Tolerance +	Tolerance mm : +- 0.55 Rated speed rpm : 850
cm3/1000 strokes : + 2.0	
Check tolerance + 4.5 + 4.5	ASSEMBLY GOVERNOR SETTING
Spreed	Rated speed rpm : 750
Tolerance cm3/1000 strokes : 3.5	rack travel mm : 12.80
cm3/1000 strokes : 3.5 + Check tolerance +	Rated speed rpm : 784
cm3/1000s. : 5.5	Tolerance 1/min : + 4
1	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	Rated speed rpm : 751 rack travel mm : 12.80
1	rack travel mm : 12.80
	Rated speed rpm : 785
GUIDE SLEEVE POSITION	Tolerance 1/min : +- 4 rack travel mm : 4.00
Ţ	
control lever	. 750
position degree : -3 + Rated speed rpm : 800 +	Rated speed rpm : 752 rack travel mm : 12.80
Traced Speed 1 piii . 300	•
Rack travel in mm : 0.50	Rated speed rpm : 786
Tolerance mm : + 0.20 +	Tolerance 1/min : +- 4 rack travel mm : 4.00
governor spring	•
pre-tension tick setting x : 2.00	Rated speed rpm : 753
titick setting x . 2.00	rack travel mm : 12.80
FULL LOAD DELIVERY AT FULL LOAD STOP	- Rated speed rpm : 787
FOLE EDAD DELIVERY AT FOLE EDAD STOP	Rated speed rpm : 787 Tolerance 1/min : +- 4
Rated speed rpm : 700	rack travel mm : 4.00
Aneroid pressure	
Del. quantity	Rated speed rpm : 754
cm3/1000 strokes : 96.0	rack travel mm : 12.80
Tolerance + 1.0 + 1.0	Rated speed rpm : 788
Check tolerance	Tolerance 1/min : +- 4
cm3/1000s. : + 3.0 + 5	rack travel mm : 4.00
Tolerance	
cm3/1000 strokes : 3.5	Rated speed rpm : 755
Check tolerance + cm3/1000s. : 6.0 +	rack travel mm : 12.80
1	Rated speed rpm : 789
†	Tolerance 1/mir: : + 4
CONTROL LEVER	rack travel mm : 4.00
+	LAU NA D
control lever position degree : 80.0	LOW IDLE
position degree : 80.0 +	

control lever

position degree : 72.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350 rack travel mm : 7.60 Tolerance mm : + 0.30

rack travel mm : 2.00
Rated speed rpm : 460
Tolerance 1/min : + 30

STARTING FUEL DELIVERY

Del. quantity

cm3/1000 strokes : 95.0

Tolerance

cm3/1000 strokes : \leftarrow 5.0

Check tolerance

cm3/1000s. : + 8.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm: 7.60Tolerance mm: \div 0.30

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

cm3/1000s. : + 4.5

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08.10.97 : ISO 4113

Combination No. : 0 403 474 021

Injection pump

Pump designation : PES4MW100/720RS1181

EP type number : 0 413 404 107

Governor

Governer design. : RSV400...1000MW1A348

Governer no. : 0 420 085 183

Cust. part No. : 9880882

Customer-spec. information Customer : LIEBHERR : D924T-E A2 Motor

Power KW

: 120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 49Tolerance °C : + 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.05Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

: 0-90-180-270 : +- 0.50 Phasing

Tolerance

Check

tolerance "NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 890

Rack travel in mm : 13.20 Tolerance mm $: \leftarrow 0.05$

Del. quantity

cm3/1000 strokes : 177.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

: +- 4.0

Spreed	- Tolerance - cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	- Check tolerance - cm3/1000s. : 7.5
	- 10000.
Check tolerance cm3/1000s. : 7.5	- CONTROL LEVER
	- CONTROL LEVER
7	- control lever
Rated speed rpm : 550	- position degree : 96.0 - tolerance degree : +- 4.0
Rack travel in mm: 4.50	DATER ODGER
Tolerance mm : +- 0.20 + Del. quantity +-	- RATED SPEED - rack travel mm : 12.20
cm3/1000 strokes : 25.0	- Rated speed rpm : 920
Tolerance	- Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0	
Check tolerance	- rack travel mm : 4.00
cm3/1000s. : +- 4.5	Rated speed rpm : 980
Spreed Tolerance	- Tolerance 1/min : ← 10
cm3/1000 strokes : 3.5	- rack travel mm : 1.00
Check tolerance	- Tolerance mm : +- 0.70
cm3/1000s. : 5.0	- Rated speed rpm : 1100
†	
(B) SETTING OF INJECTION PUMP	- rack travel mm : 4.00 - Rated speed rpm : 990
WITH GOVERNOR	- Rated speed rpm : 990 - Tolerance 1/min : +- 10
WITH GOACHHON	-
Т	-
CHINE OF EDIT DOCUTION	- -
GUIDE SLEEVE POSITION	- IOM TOLE
GUIDE SLEEVE POSITION	LOW IDES
control lever	- -
control lever position degree : - 3	- - control lever
control lever	- - control lever - position degree : 78.0
control lever position degree : - 3 Rated speed rpm : 800	- - control lever
control lever position degree : - 3	- - control lever - position degree : 78.0
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension click setting x : 3.75	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550 rack travel mm : 4.10 Tolerance mm : + 0.10 Rated speed rpm : 100
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension click setting x : 3.75	control lever position degree : 78.0 tolerance degree : 4.0 Setting point w/out bumper spring Rated speed rpm : 550 rack travel mm : 4.10 Tolerance mm : 4.10 Rated speed rpm : 100 CRT mm min. : > 19.00
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension click setting x : 3.75 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 890 Aneroid pressure	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550 rack travel mm : 4.10 Tolerance mm : + 0.10 Rated speed rpm : 100
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension click setting x : 3.75 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 890 Aneroid pressure hPa : 1250	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550 rack travel mm : 4.10 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.00 Testing:
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension click setting x : 3.75 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 890 Aneroid pressure hPa : 1250 Del. quantity	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550 rack travel mm : 4.10 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.00 Testing: Rated speed rpm : 550
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension click setting x : 3.75 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 890 Aneroid pressure hPa : 1250 Del. quantity cm3/1000 strokes : 177.0	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550 rack travel mm : 4.10 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. :> 19.00 Testing: Rated speed rpm : 550 rack travel mm : 4.50
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension click setting x : 3.75 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 890 Aneroid pressure hPa : 1250 Del. quantity	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550 rack travel mm : 4.10 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. : > 19.00 Testing: Rated speed rpm : 550
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension click setting x : 3.75 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 890 Aneroid pressure hPa : 1250 Del. quantity cm3/1000 strokes : 177.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550 rack travel mm : 4.10 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. :> 19.00 Testing: Rated speed rpm : 550 rack travel mm : 4.50 Tolerance mm : 4.50 Tolerance mm : + 0.20
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension click setting x : 3.75 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 890 Aneroid pressure hPa : 1250 Del. quantity cm3/1000 strokes : 177.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550 rack travel mm : 4.10 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. :> 19.00 Testing: Rated speed rpm : 550 rack travel mm : 4.50 Tolerance mm : + 0.20 TORQUE CONTROL
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65 Tolerance mm : + 0.35 governor spring pre-tension click setting x : 3.75 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 890 Aneroid pressure hPa : 1250 Del. quantity cm3/1000 strokes : 177.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	control lever position degree : 78.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 550 rack travel mm : 4.10 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. :> 19.00 Testing: Rated speed rpm : 550 rack travel mm : 4.50 Tolerance mm : 4.50 Tolerance mm : + 0.20

Tolerance mm	: ← 0.05	+ Aneroid
0-4-4	. 500	+ hPa
Rated speed rpm rack travel mm	: 500 : 13.20	+ Rated sp
Tolerance mm	: + 0.10	+ Del. qua + cm3/1000
OCCIDING INF	. 1 0.10	+ Tolerand
Rated speed rpm	: 600	+ cm3/1000
rack travel mm	. 13.20	Check to
rack travel mm	: + 0.10	+ cm3/1000
		1
		- +
ANEROID/ALTITUDE		+ Aneroid
COMPENSATOR TEST		+ hPa
		+ Rated sp
		+ Del. qua
SETTING		+ cm3/1000
Control one and and	. 550	+ Tolerand
Rated speed rpm Pressure hPa	: 550 : 1250	+ cm3/1000 + Check to
rressure nra rack travel mm	: 13.20	+ theck to
rack travet mm Tolerance mm	: + 0.05	T cm3/1000
TO CET ON ICE IMIN	. ' 0.02	I
Rated speed rpm	: 550	
Pressure hPa	: -	STARTING
rack travel mm	11.50	+
Tolerance mm	: +- 0.05	+ ESS tes
		+ rack mu
MEASUREMENT		+ control
		+
ated speed rpm	: 550	+
	5.0	†
ressure hPa	: 560 : 11.90	+ Rated sp
rack travel mm Tolerance mm	: 11.90 : +- 0.05	+ rack tra + Tolerand
Ote: arite init	0.05	Del. qua
Pressure hPa	: 650	+ cm3/1000
rack travel mm	: 12.80	+ Tolerand
Tolerance mm	: + 0.10	- cm3/1000
		- Check to
		+ cm3/1000
·····		- +
FUEL DELIVERY CHA	ARACTERISTICS	†
		I
Aneroid pressure		LOW IDLE
hPa .	: 1250	+
Rated speed rpm	: 500	+ Rated sp
Del. quantity	A 6-1-	+
cm3/1000 strokes	: 178.0	+ Rack tra
Tolerance		+ Tolerand
cm3/1000 strokes	: + 2.0	+ Del. qua
		+ cm3/1000 + Tolerand
		→ Jolerand
Check tolerance cm3/1000s.	: +- 5.0	
c m 3/1000S. Spreed	: + 5.0	+ cm3/1000
cm3/1000S. Spreed Tolerance	_	+ cm3/1000 + Check to
cm3/1000S. Spreed Tolerance cm3/1000 strokes	: ← 5.0 : 6.0	- cm3/1000 - Check to - cm3/1000
cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 6.0	- cm3/1000 - Check to - cm3/1000 - Spreed
cm3/1000S. Spreed Tolerance cm3/1000 strokes	_	- cm3/1000 - Check to - cm3/1000

Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 1250 : 600 : 180.0 : +- 2.0 : +- 5.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 550 : 149.0 : +- 1.0 : +- 4.0
	V solenoid activated, tart position in max.
rack travel mm Tolerance mm Del. quantity cm3/1000 strokes	: 100 : 20.00 : + 1.00 : 135.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 5.0 : +- 8.0
cm3/1000 strokes Check tolerance cm3/1000s. LOW IDLE Rated speed rpm Rack travel in mm Tolerance mm Del. quantity	: +- 8.0 : 550

Check tolerance cm3/1000s.	:	5.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 08.10.97

Test oil

: ISO 4113

Combination No. : 0 403 474 021F

Injection pump

Pump designation : PES4MW100/720RS1181

EP type number : 0 413 404 107

Governor

Governer design. : RSV400...1000MW1A348

Governer no. : 0 420 085 183

Cust. part No. :

Customer-spec. information

Customer : LIEBHERR

Motor

: D924 T-E A2

Power KW

: 120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

REMARKS

x length mm

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

x inside diameter: 2.0

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 31.0 Tolerance bar : +- 1.0

Prestroke mm 3.05 : +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 : + 1.50 Tolerance mm

Firing order : 1-3-4-2

Phasing : 0-90-180-270 Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 890

Rack travel in mm : 13.20

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 177.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 4.0

B05

Spreed	+ Tolerance + cm3/1000 strokes : 4.0		
Tolerance	Check tolerance		
cm3/1000 strokes : 4.0	cm3/1000s. : 7.5		
Check tolerance cm3/1000s. : 7.5	<u></u>		
	CONTROL LEVER		
	control lever		
Rated speed rpm : 400	position degree : 96.0		
Rack travel in mm: 4.50	RATED SPEED		
Toterance mm : + 0.20	+ rack travel mm : 12.20		
Del. quantity	+ Rated speed rpm : 920		
cm3/1000 strokes : 25.0	Tolerance 1/min : + 5		
Tolerance cm3/1000 strokes : +- 2.0	T mack through an / 00		
Check tolerance	+ rack travel mm : 4.00 + Rated speed rpm : 980		
cm3/1000s. : +- 4.5	+ Rated speed rpm : 980 + Tolerance 1/min : + 10		
Spreed	1000141100 1741111		
Tolerance	rack travel mm : 1.00		
cm3/1000 strokes : 3.5	+ Tolerance mm : + 0.79		
Check tolerance	+ Rated speed rpm : 1075		
cm3/1000s. : 5.0	+		
	+ rack travel mm : 4.00		
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 990 + Tolerance 1/min : + 10		
GUIDE SLEEVE POSITION	LOW IDLE		
	‡		
control lever	+ control lever		
position degree : - 3	position degree : 78.0		
Rated speed rpm : 800	+		
Rack travel in mm : 0.65	+ Setting point w/out bumper spring		
Tolerance mm : + 0.35	+ Rated speed rpm : 550		
_	rack travel mm : 4.10		
governor spring	+ Tolerance mm : + 0.10		
pre-tension	Patral arrand mm. 400		
click setting x : 3.75	+ Rated speed rpm : 100		
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 19.00		
	Testing:		
Rated speed rpm : 890 Aneroid pressure	Rated speed rpm : 550		
hPa : 1250	rack travel mm : 4.50		
Del. quantity	+ Tolerance mm : + 0.20		
cm3/1000 strokes : 177.0 Tolerance			
cm3/1000 strokes : + 1.0	TORQUE CONTROL		
Check tolerance	Rated speed rpm : 890		
cm3/1000s. : +- 4.0	+ rack travel mm : 13.20		
Spreed	+ Tolerance mm : + 0.05		
	+		

Rated speed rpm	: 500	+	Rated speed rpm	: 600
ack travel mm olerance mm	: 13.20	+	Del. quantity cm3/1000 strokes	
oterance mm	: 0.05	‡	Tolerance	: 180.0
ited speed rpm	: 600	+	cm3/1000 strokes	: +- 2.0
c travel mm erance mm		1	Check tolerance cm3/1000s.	: + 5.0
		+		3.0
ROID/ALTITUDE		 ‡	Aneroid pressure	
MPENSATOR TEST		+	hPa	:
		İ	Rated speed rpm Del. quantity	: 550
TING		1	cm3/1000 strokes	: 149.0
		+	Tolerance	
ted speed rpm essure hPa		1	cm3/1000 strokes Check tolerance	: + 1.0
ck travel na		Ţ	cm3/1000s.	: + 4.0
erance mm		+		
ited speed rpm	: 550	‡		
ressure hPa nck travel mm		+	STARTING FUEL DEL	IVERY
ck travel mm lerance mm	: 11.50 : 0.05	†	ECC tooks likk 3	W. M. and amend and
oterance an	; U.U3	1		4 V solenoid act start position i
ASUREMENT		+	control lever se	
ed speed rpm	: 550	‡		
ssure hPa	: 560	Ī	Rated speed rpm	: 100
c travel mm	: 11.90	+	rack travel mm	: 20.00
erance mm	: ← 0.05	+	Tolerance mm	: +- 1.00
essure hPa	: 650	1	Del. quantity cm3/1000 strokes	• 135.0
ck travel mm	: 12.80	Į	Tolerance	. 133.0
lerance mm		+	cm3/1000 strokes	: ← 5.0
		+	Check tolerance	00
		‡	cm3/1000S.	: ← 8.0
EL DELIVERY CHA	ARACTERISTICS	‡		
neroid pressure		‡	LOW IDLE	
Pa	: 1250	+	D. A. J. J.	100
ated speed rpm el. quantity	: 500	1	Rated speed rpm	: 400
3/1000 strokes	: 178.0	Į	Rack travel in mm	4.50
lerance		+	Tolerance mm	
3/1000 strokes	: +- 2.0	+	Del. quantity cm3/1000 strokes	. 25 0
ck tolerance 3/1000S.	: +- 5.N	I	Tolerance	. 25.0
reed		+	cm3/1000 strokes	: ← 2.0
lerance		+	Check tolerance	
3/1000 strokes eck tolerance	: 6.0	†	cm3/1000s. Spreed	: +- 4.5
ack tolerance 3/1000s.	: 9.0	I	Tolerance	
		+	cm3/1000 strokes	: 3.5
		+	Check tolerance	5 5
roid pressure		†	cm3/1000s.	: 5.0
3	: 1250	+		

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 08.10.97 Test oil : ISO 4113

Combination No. : 0 403 476 071

Injection pump

Pump designation : PES6MW100/720RS1130

: -2

EP type number : 0 413 406 164

Governor

Governer design. : RSV350...1300MW0A318

: -6

Governer no. : 0 420 085 117

Cust. part No. :

Customer-spec. information Customer : MB-NFZ : OM 366 A Motor

Power KW

: 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0 temp. °C 40

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : ← 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 1.5

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance "NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm: 11.05 Tolerance mm : \pm 0.05

Del. quantity

cm3/1000 strokes : 78.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	CONTROL LEVER
Rated speed rpm : 350	control lever position degree : 100.0 tolerance degree : + 4.0
Rack travel in mm: 7.50 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 11.0 Tolerance	RATED SPEED rack travel mm : 10.00 Rated speed rpm : 1325 Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0 Spreed	rack travel mm : 4.00 Rated speed rpm : 1395 Tolerance 1/min : + 15
Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.5	rack travel mm : 1.00 Tolerance mm : + 0.70 Rated speed rom : 1560
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION	control lever position degree : 73.0 tolerance degree : +- 4.0
control lever position degree : - 3	Setting point w/out bumper spring
Rated speed rpm : 800	Rated speed rpm : 100
Rack travel in mm: 0.65 Tolerance mm: + 0.35	CRT mm min. : > 19.00 Testing:
governor spring pre-tension click setting x : 4.00	Rated speed rpm : 350 rack travel mm : 7.50 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1280 Aneroid pressure	rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30
hPa : - + Del. quantity cm3/1000 strokes : 78.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	TORQUE CONTROL Rated speed rpm : 1280 rack travel mm : 11.05 Tolerance mm : + 0.05
cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	Rated speed rpm : 750 rack travel mm : 11.75 Tolerance mm : + 0.05

Rated speed rpm	:	825
rack travel mm	:	11.50
Tolerance mm	: +	- 0.10

C4					
Star	т т	$m\epsilon$	er.	OC.	κ

Rated speed rpm : > 100

Check

speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure			
hPa	:	_	
Rated speed rpm	:	750	
Del. quantity			
cm3/1000 strokes	:	73.0	
Tolerance			
cm3/1000 strokes	: +-	1.5	
Check tolerance			
cm3/1 000 S.	: +-	4.0	
Spreed		,	
Tolerance			
cm3/1000 strokes	:	5.0	
Check tolerance			
cm3/1000S.		7.0	
ciii 57 10000 :	•	, .0	

STARTING FUEL DELIVERY

Kated speed rpm	:	100
Del. quantity cm3/1000 strokes	•	83.0
Tolerance	•	05.0
		- 0
cm3/1000 strokes	: +-	5.0
Check tolerance		
cm3/1000s.	: +-	8.0

LOW IDLE

Rated speed rpm	:	350	
Del. quantity	: +-	7.50 0.10	
cm3/1000 strokes Tolerance	:	11.0	
	: +-	2.0	
cm3/1000s. Spreed	: +-	4.0	

Tolerance

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s. : 5.5

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.10.97 Test oil : ISO 4113

Combination No. : 0 403 476 112

Injection pump

Pump designation : PES6MW100/720RS1225

: -1

EP type number : 0 413 406 220

Governor

Governer design. : RSV400...1000MW1A338

: -1

Soverner no. : 0 420 085 184

Cust. part No. : 9880791

Customer—spec. information
Customer : LIEBHERR
Motor : D 926 T-E A2

Power KW : 164.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 477 413 049

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05
Check

Спеск

tolerance mm : + 0.10

Rack travel in mm : 10.51 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 990

Rack travel in mm : 14.05 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 159.0

Tolerance

cm3/1000 strokes : \leftarrow 1.0

Check tolerance $c_{m3}/1000$ S. : \leftarrow 4.0	t Check tolerance cm3/1000s. : +- 4.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. 7.5
Check tolerance cm3/1000S. : 7.5	CONTROL LEVER
-	CONTROL LEVER
Rated speed rpm : 400	control lever position degree : 98.0 tolerance degree : + 4.0
Rack travel in mm : 5.80 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 17.0 Tolerance	RATED SPEED rack travel mm : 13.G5 Rated speed rpm : 1030 Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed	rack travel mm : 4.00 Rated speed rpm : 1075 Tolerance 1/min : + 10
Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.0	rack travel mm : 1.00 Tolerance mm : + 0.70 Rated speed rpm : 1200
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1085 Tolerance 1/min : +- 10
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65	control lever position degree : 70.0 tolerance degree : + 4.0
Tolerance mm : + 0.35	Setting point w/out bumper spring
governor spring pre-tension click setting x : 2.25	Rated speed rpm : 400 rack travel mm : 5.00 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD	
Rated speed rpm : 990 Aneroid pressure hPa : 1200	CRT mm min. : > 19.00 Testing:
Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 400 rack travel mm : 5.80 Tolerance mm : \(\to 0.10 \)

		+ Tolerance
		- $+$ cm3/1000 strokes : 6.0
TORQUE CONTROL	 .	+ Check tolerance
lated speed rpm	: 990 : 14.05	+ cm3/1000s. : 9.0
ack travel mm	: 14.05	†
lerance mm	: +- 0.05	†
	500	+ Aneroid pressure
ted speed rpm	: 500	† hPa : 1200
ack travel mm		Rated speed rpm : 700
olerance mm	: ← 0.10	† Del. quantity
		+ cm3/1000 strokes : 160.5
ated speed rpm	: 700	+ Tolerance
ack travel mm	: 14.05	+ cm3/1000 strokes : + 2.0
lerance mm	: +- 0.10	† Check tolerance
		+ cm3/1000s. : +- 5.0
		+
EROID/ALTITUDE		
MPENSATOR TEST		+ Anerbid pressure
		-
		Rated speed rpm : 550
ETTING		Del. quantity
-		+ cm3/1000 strokes : 139.0
ated speed rpm	: 550	+ Tolerance
ressure hPa	: 1200	- cm3/1000 strokes : +- 1.0
ack travel mm	: 14.05	+ Check tolerance
olerance mm		+ cm3/1000s. : +- 4.0
rectance mm	0.10	4.0
ated speed rpm	: 550	1
recoure hDs	•	
ressure hPa nck travel mm	. 13 /.0	STARTING FUEL DELIVERY
olerance mm	. 13.40 . <u></u> 0.05	T STANTING FUEL DEFINERS
cerance mm	0.05	T Dated aread 100
L V C1 1D L34C7 12.		+ Rated speed rpm : 100
EASUREMENT		rack travel mm : 20.25
		+ Tolerance mm : + 0.75
ated speed rpm	; 550	+ Del. quantity
	_	+ cm3/1000 strokes : 135.0
ressure hPa		+ Tolerance
ack travel mm	: 13.60	+ cm3/1000 strokes : +- 5.0
olerance mm	: + 0.10	† Check tolerance
		+ cm3/100Gs. : +- 8.0
ressure hPa	: 650	+
ack travel mm	: 13.95	+
lerance mm		+
		
		LOW IDLE
		 +
UEL DELIVERY CHA	ARACTERISTICS	Rated speed rpm : 400
		+
		+ Rack travel in mm : 5.80
neroid pressure		+ Tolerance mm : +- 0.10
a biessure	: 1200	Del. quantity
ra ited speed rpm	. 1200	cm3/1000 strokes : 17.0
	. 200	+ Tolerance
el. quantity m3/1000 strokes	. 155 0	- cm3/1000 strokes : +- 2.0
	; 122.0	
olerance		+ Check tolerance
n3/1000 strokes	: ← 2.0	+ cm3/1000s. : +- 4.5
heck tolerance		+ Spreed
n3/1000s.	: +- 5.0	+ Tolerance
reed		+ cm3/1000 strokes : 3.5
		+

Check tolerance cm3/1000s.	:	5.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.10.97 Test oil : ISO 4713

Combination No. : 0 403 476 i12D

Injection pump

Pump designation : PES6MW100/720RS1225

: -1

EP type number : 0 413 406 220

Governor

Governer design. : RSV400...1000MW1A338

: -1

Governer no. : 0 420 085 184

Cust. part No. : 9880791

Customer-spec. information

Customer : LIEBHERR

Motor : D 926 T-EA2 Power KW : 164.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.51 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance "NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 990

14.05 Rack travel in mm : Tolerance mm : \leftarrow 0.05

Del. quantity

cm3/1000 strokes : 159.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance Check tolerance : +- 4.0 cm3/1000s. : +- 4.0 cm3/1000s. Spreed Tolerance Spreed cm3/1000 strokes : 4.0 Tolerance Check tolerance cm3/1000 strokes : 4.0 cm3/1000s. 7.5 : Check tolerance 7.5 cm3/1000s. CONTROL LEVER control lever Rated speed rpm : 400 position degree : 98.0 tolerance degree : +- 4.0 5.80 Rack travel in mm : Tolerance mm : +- 0.10 RATED SPEED Del. quantity rack travel mm : 13.05 cm3/1000 strokes : 17.0 Rated speed rpm : 1030 Tolerance 1/min : +- 5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance rack travel mm : 4.00 : +- 4.5 cin3/1000s. Rated speed rpm : 1075 Tolerance 1/min : + 10 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance 5.0 Rated speed rpm : 1200 cm3/1000s. : rack travel mm : 4.00 (B) SETTING OF INJECTION PUMP Rated speed rpm : 1085 WITH GOVERNOR Tolerance 1/min : + 10 GUIDE SLEEVE POSITION LOW IDLE control lever position degree : - 3 control lever position degree : 70.0 Rated speed rpm : 800 tolerance degree : + 4.0 Rack travel in mm : 0.65
Tolerance mm : + 0.35 Setting point w/out bumper spring 400 governor spring Rated speed rpm : 5.00 pre-tension rack travel mm : : +- 0.10 click setting x: 2.25 Tolerance mm Rated speed rpm : 100 FULL LOAD DELIVERY AT FULL LOAD STOP CRT mm min. : > 19.50 Rated speed rpm : 990 Aneroid pressure Testing: 1200 hPa Rated speed rpm : 400 rack travel mm : 5.80 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 159.5 Tolerance cm3/1000 strokes : +- 1.0

		† Tolerance	
TORQUE CONTROL			
Rated speed rpm	: 990	- cm3/1000s.	
rack travel mm		I (ms/10003.	
Tolerance mm	: + 0.05		
	0.05	+ Aneroid pressure	
Rated speed rpm	: 500	+ hPa :	
ack travel mm	: 14.05	+ Rated speed rpm :	
lerance mm	: ← 0.05	+ Del. quantity	
		- cm3/1000 strokes :	
ated speed rpm	: 700	+ Tolerance	
ck travel mm		+ cm3/1000 strokes :	+
lerance mm		+ Check tolerance	
3 CO. 21 10 C		+ cm3/1000s. :	+-
	·		
NEROID/ALTITUDE		+	
COMPENSATION TEST		+ Aneroid pressure	
		† hPe :	
		+ Rated speed rpm :	
ETTING		+ Del. quantity	
		+ cm3/1000 strokes :	
ted speed rpm	: 5 0 6	+ Tolerance	
essure hPa	: 1200	+ cm3/1000 strokes :	+-
ck travel mm	: 14.05	+ Check tolerance	
rance mm	: + 0.10	+ cm3/1000s. :	+-
		+	
ted speed rpm	: 50C	+	
essure hPa	: -	+	
k travel mm	: 13.40	+ STARTING FUEL DELIVE	R۱
erance mm	: ← 0.05	+	
		+ Rated speed rpm :	
REMENT		+ rack travel mm :	
		+ Tolerance mm :	+-
l speed rpm	: 500	→ Del. quantity	
		+ cm3/1000 strokes :	
sure hPa	: 565	+ Tolerance	
ck travel mm	: 13.60	+ cm3/1000 strokes :	+
erance rim	0.10	+ Check tolerance	
	- · · •	- cm3/1000s. :	+
ssure hPa	: 650	1	
ck travel mm	: 13.95	<u> </u>	
erance mm	: + 0.05	1	
,C. G. ICC HAII		<u> </u>	
		LOW IDLE	
DELIVERY CHA	RACTERISTICS	Rated speed rpm :	
		Rack travel in mm :	
eroid pressure		Tolerance mm :	+-
erota pressure a	: 1200	+ Del. quantity	
	: 1200	+ cm3/1000 strokes :	
ited speed rpm	. 500		
el. quantity	. 455 0	+ Tolerance	_
n3/1000 strokes	: 155.0	cm3/1000 strokes :	+
olerance		+ Check tolerance	
13/1000 strokes	: +- 2.0	+ cm3/1000s. :	+-
eck tolerance		+ Spreed	
3/10 00 s.	: ← 5.0	+ Tolerance	
reed		+ cm3/1000 strokes :	
		+	

Aneroid pressure	. 1200
hPa	: 1200
Rated speed rpm	: 700
Del. quantity	. 140.0
cm3/1000 strokes	: 160.0
Tolerance	
cm3/1000 strokes	: + 2.0
Check tolerance	. 50
cm3/1000s.	: +- 5.0
Aneroid pressure	
hPa	: -
Rated speed rpm	: 500
Del. quantity	
cm3/1000 strokes	: 139.0
Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000s.	: 3.0
CTARTING FUEL DELT	TVEDV
STARTING FUEL DELI	TVEKI
Rated speed rpm	: 100
rack travel mm	20.25
Tolerance mm	: +- 0.75
Del. quantity	
cm3/1000 strokes	: 135.0
Tolerance	. 133.0
cm3/1000 strokes	: ← 5.0
cms/ludu strokes Check tolerance	, +- 3.0
cm3/1000s.	: +- 8.0
LOW IDLE	
	/00
Rated speed rpm	: 400
Rack travel in mm	: 5.80
Tolerance mm	: +- 0.10
Del. quantity	
cm3/1000 strokes	: 17.0
Tolerance	
cm3/1000 strokes	· + 2 D
Check tolerance	
cm3/1000s.	: +- 4.5
	• 1= 4.3
Spreed	
Tolerance	. 75
cm3/1000 strokes	: 3.5
CIII 3/ 1000 3110KE2	. 3.7

6.0

9.ຄ

Check tolerance cm3/1000s.	:	5.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 25.02.93 Test oil : ISO 4113

Combination No. : 0 403 476 113

Injection pump

Pump designation : PES6MW100/720RS1131

: -1

EP type number : 0 413 406 165

Governor

Governer design. : RSV350...1200MW0A342

: -10

Governer no. : 0 420 085 187

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : OM 366 LA Power KW : 132.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 10.50 Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

: + 0.75 tolerance "NW

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.10 Tolerance mm : \leftarrow 0.10

Del. quantity

cm3/1000 strokes : 770

Tolerance

cm3/1000 strokes : \leftarrow 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance cm3/1000 strokes : 3.5	cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	CONTROL LEVER
Rated speed rpm : 350	control lever position degree : 100.0 tolerance degree : +- 4.0
+	
Rack travel in mm: 5.75 Tolerance mm: + 0.25 Del. quantity	RATED SPEED
cm3/1000 strokes : 11.0	rack travel mm : 1.00 Tolerance mm : + 0.70 Rated speed rpm : 1450
cm3/1000 strokes : + 2.0 Check tolerance	
cm3/1000s. : + 4.5 + 5	rack travel mm : 4.00 Rated speed rpm : 1315 Tolerance 1/min : +- 15
Tolerance cm3/1000 strokes : 3.5 Check tolerance	rack travel mm : 10.10 Rated speed rpm : 1248
cm3/1000s. : 5.5	Tolerance 1/min : + 8
(B) SETTING OF INJECTION PUMP	ASSEMBLY GOVERNOR SETTING
WITH GOVERNOR	Rated speed rpm : 1240 rack travel mm : 10.10
GUIDE SLEEVE POSITION	Rated speed rpm : 1284 Tolerance 1/min : + 4 rack travel mm : 4.00
control lever position degree : -3 Rated speed rpm : 800	Rated speed rpm : 1241 rack travel mm : 10.10
Rack travel in mm: 0.65 Tolerance mm: + 0.35 governor spring	Rated speed rpm : 1285 Tolerance 1/min : +- 4 rack travel mm : 4.00
pre-tension click setting x : 3.00	Rated speed rpm : 1242 rack travel mm : 10.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 1286 Tolerance 1/min : +- 4
Rated speed rpm : 1200 + Aneroid pressure +	rack travel mm : 4.00
hPa : 700 Del. quantity	Rated speed rpm : 1243
cm3/1000 strokes : 77.0 + Tolerance + Tolerance	rack travel mm : 10.10
cm3/1000 strokes : + 1.0 + Check tolerance + 3.0	Rated speed rpm : 1287 Tolerance 1/min : +- 4
cm3/1000s. : + 3.0 + Spreed + Tolerance + -	rack travel mm : 4.00
cm3/1000 strokes : 3.5	Rated speed rpm : 1244

Check tolerance

rack travel mm : 10.10	rack travel mm : 10.20 Tolerance mm : +- 0.10
Rated speed rpm : 1288 Tolerance 1/min : +- 4 rack travel mm : 4.00	Rated speed rpm : 500 Pressure hPa : 200 rack travel mm : 11.10 Tolerance mm : +- 0.10
Rated speed rpm : 1245 rack travel mm : 10.10	MEASUREMENT
Rated speed rpm : 1289 Tolerance 1/min : + 4 rack travel mm : 4.00	Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 12.20
LOW IDLE	Tolerance mm : + 0.10
Setting point w/out bumper spring	Pressure hPa : 300 rack travel mm : 11.70 Tolerance mm : + 0.10
Rated speed rpm : 100	†
CRT mm min. : > 19.00	FUEL DELIVERY CHARACTERISTICS
Testing:	<u> </u>
Rated speed rpm : 350 rack travel mm : 5.75 Tolerance mm : + 0.25	Aneroid pressure hPa : 700 Reted speed rpm : 500
rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30	<pre>Del. quantity cm3/1000 strokes : 71.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance</pre>
TORQUE CONTROL Rated speed rpm : 1200 rack travel mm : 11.10 Tolerance mm : + 0.10	cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Rated speed rpm : 500 rack travel mm : 12.30	cm3/1000s. : 7.0
Tolerance mm : + 0.10 Rated speed rpm : 600	Aneroid pressure hPa : - Rated speed rpm : 500
rack travel mm : 12.10 Tolerance mm : + 0.10	Del. quantity cm3/1000 strokes : 37.0 Tolerance
Rated speed rpm : 1000 rack travel mm : 11.50 Tolerance mm : + 0.10	cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0
ANEROID/ALTITUDE COMPENSATOR TEST	STARTING FUEL DELIVERY
SETTING	Rated speed rpm : 100 Del. quantity
Rated speed rpm : 500 Pressure hPa : -	+ cm3/1000 strokes : 105.0 + Tolerance + cm3/1000 strokes : + 5.0

Check tolerance		
cm3/1000s.	: +-	8.0

LOW IDLE

Rated speed rpm	: 350
Rack travel in mm Tolerance mm Del. quantity	: 5.75 : + 0.25
- 44400	: 11.0
cm3/1000 strokes Check tolerance	: ← 2.0
cm3/1000S. Spreed Tolerance	: + 4.5
- 14000 · 1	: 3.5
cm3/100ús.	: 5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08,10,97 : ISO 4113

Combination No. : 0 402 076 817

Injection pump

Pump designation : PES6P120A720RS3367 EP type number : 0 412 026 788

Governor

Governer design. : RSV525...1000P2A640

: -1

Governer no. : 0 421 833 604

Cust. part No. : RE71286

Customer-spec. information Customer : DEERE

Motor

: 6081HT001

Power KW

: 186.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance *C

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05

Check

tolerance m_0 : \leftarrow 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5- 3- 6- 2-

: 4

: 0-60-120-180-240 Phasing

Start of delivery mark

*NW after s.o.d. : 7.50

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel

: 14.00

Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 12.90 Tolerance mm: + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000
Del. quantity cm3/1000 strokes : 174.0	Aneroid pressure hPa : 1400
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 174.0 Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : + 3.0	Check tolerance cm3/1000s. : + 3.0 Spreed
Spreed	Tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	
	CONTROL LEVER
Rated speed rpm : 525	<pre>control lever position degree : 89.0 tolerance degree : +- 4.0</pre>
Rack travel in mm: 5.00	RATED SPEED
Tolerance rum : :- 0.10 + Del. quantity +	rack travel mm : 11.30
cm3/1000 strokes : 26.0	Rated speed rpm : 1070
Tolerance +	Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0 + Check tolerance +	rack trave! mm : 4.00
cm3/1000s. : + 4.5	Rated speed rpm : 1115
Spreed	Tolerance 1/min : +- 5
Tolerance + cm3/1000 strokes : 6.0 +	rack travel mm : 0.85
Check tolerance	Tolerance mm : +- 0.55
cm3/1000s. : 8.0	Rated speed rpm : 1200
Ţ.	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1115
WITH GOVERNOR	Tolerance 1/min : +- 15
+	
GUIDE SLEEVE POSITION +	
4	LOW IDLE
control lever	
position degree : - 3	control lever
Rated speed rpm : 800	position degree : 72.0
Rack travel in mm: 0.50	tolerance degree : +- 4.0
Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring +	Rated speed rpm : 525
pre-tension +	rack travel mm : 4.50 Tolerance mm : + 0.10
click setting x : 3.00	Toterance mm : +- 0.10
τ	

Rated speed rpm : 100 CRT name min. : > 19.00 Testing: Rated speed rpm : 525 rack travel mm : 5.00 : + 0.10 Tolerance mm TORQUE CONTROL : 1000 Rated speed rpm 12.90 rack travel mm Tolerance mm : **←** 0.05 Rated speed rpm : 700 rack travel mm : 13.60 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 5C0 Pressure hPa : 1400 Rated speed rpm : 500 Pressure hPa : rack travel mm 12.25 Tolerance mm : ← 0.10 **MEASUREMENT** : 500 Rated speed rpm 975 Pressure hPa : 13.30 rack travel mm : : +- 0.20 Tolerance mm : 830 Pressure hPa rack travel mm : 12.60 : +- 0.C5 Tolerance mm FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 1400 Rated speed rpm : 700

Check tolerance : +- 4.0 cm3/1000s. Aneroid pressure hPa Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 168.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : +- 0.50 Del. quantity cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes : + 20.0Check tolerance cm3/1000s. : +- 25.0 LOW IDLE Rated speed rpm : 525 Rack travel in mm: 5.00 Tolerance mm : \leftarrow 0.10 Del. quantity cm3/1000 strckes . 26.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s.: 8.0

End of test specification sheet

Del. quantity

Tolerance

cm3/1000 strokes : 193.5

cm3/1000 strokes : \leftarrow 2.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 07.09.95 test oil : 17.09.95

Combination No. : 0 402 746 600

Injection pump

Pump designation : PES6P120A320LS7322 EP type number : 0 412 726 904

Governor

Governer design. : RQV350...1000PA1135

: -1K

Governer no. : 0 421 815 473

Cust. part No. : 1824945091

Sustaner-spec. information Customer : NAVISTAR Motor

: DT-531

Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

: 40

Tolerance °C

Overflow valve : 2 417 413 076

Inlet press. bar : 2.8

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter :

x inside diameter:

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.90 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 11.50 Tolerance mm : \leftarrow 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Start of delivery blocking

Tolerance : + 0.10

tolerance °NW : +- 0.23

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 14.55 Tolerance mm : \leftarrow 0.05

Del. quantity

cm3/1000 strokes : 220.0

Tolerance cm3/1000 strokes	: + 1.0	† 9 † 1
Check tolerance cm3/1000s.	: + 4.0	+ ;
Spreed		+ 1
Tolerance cm3/1000 strokes	: 8.0	+ !
Check tolerance cm3/1000s.	: 12.0	+
Rated speed rpm	: 350	+ 1
Rack travel in mm Tolerance mm Del. quantity	5.80 : +- 0.10	
cm3/1000 strokes	: 21.0	+ 9
Tolerance cm3/1000 strokes	: ← 3.0	‡ ;
Check tolerance cm3/1000s. Spreed	: ← 5.0	+ (
Tolerance cm3/1000 strokes	: 5.0	+ 7
Check tolerance cm3/1000s.	: 9.0	+ (
(8) SETTING OF IN WITH GOVERNOR		+ -
GUIDE SLEEVE TRAN	/EL	+ 5
Rated speed rpm guide sleeve	: 1066	1,
travel mm Tolerance mm	: 9.62 : + 0.25	+ ! + F
Rated speed rpm guide sleeve	: 350 : 1.95	+ !
travel mm Tolerance mm	: + 0.25	+ +
Rated speed rpm guide sleeve	: 737	
travel mm Tolerance mm	: 6.27 : + 0.25	<u> </u>
Rated speed rpm guide sleeve	: 383	Ī -
travel mm Tolerance mm	: 2.46 : + 0.25	+ 1
Rated speed rpm	: 433	Ţ

guide sleeve travel mm Tolerance mm	: 3.17 : + 0.25
Rated speed rpm guide sleeve travel mm	: 490 : 4.00
Tolerance mm	: + 0.25
Rated speed rpm guide sleeve	: 1330
travel mm Tolerance mm	: 13.50 : + 0.50
FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rated speed rpm Aneroid pressure	: 1000
hPa Del. quantity	: 1200
cm3/1000 strokes Tolerance	: 220.0
cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000s. Spreed	: +- 4.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
CONTROL LEVER	
control lever position degree tolerance degree	: 119.0 : ← 6.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 13.50 : 1065 : +- 15
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1185 : +- 5
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 1225

LOW IDLE

: 75.0 : +- 6.0
ut bumper spring
: 275
: > 8.00
: 350 : 5.80 : + 0.10
: 425
: 1000
: 14.55 : +- 0.05
כט.ט די ט
: 650
: 13.30
: +- 0.10
: 800
: 13.80
: + 0.10
: 1200
: 1000
. 40.40
: 10.10 : + 0.20
: 700
: 13.45
: + 0.20
: 330
: 11.35 : + 0.05
: +- 0.05

Rated speed rpm Rated speed rpm	: > 100 : < 280
Check speed 1/min Check	; > 80
speed 1/min	: < 290
FUEL DELIVERY CHAP	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1200 : 800
Del. quantity cm3/1000 strokes Tolerance	: 215.5
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s. Spreed	: +- 6.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1000 : 113.5 : ← 2.0 : ← 4.0
STARTING FUEL DELI	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes	: 100 : 21.00 : ← 0.50 : 127.0
Tolerance cm3/1000 strokes	: + 20.0
Check tolerance cm3/1000s.	: 30.0
LOW IDLE	
Rated speed rpm	: 350
Rack travel in mm	: 5.80

Tolerance mm	: +-	0.10
Del. quantity cm3/1000 strokes Tolerance	:	21.0
cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000s.	: +-	5.0
Tolerance cm3/1000 strokes Check tolerance	:	5.0
cm3/1000s.	:	9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13.10.97 Test oil : ISO 4113

Combination No. : 0 402 746 614

Injection pump

Pump designation : PES6P12DA32DRS7419

EP type number : 0 412 726 961

Governor

Governer design. : RQV300...1300PA1288K

Governer no. : 0 421 815 519

Cust. part No. : 386 6799

Customer-spec. information Customer : CDC
Motor : 5CTA
Power KW : 320.4

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

: 40 temp. °C temp. TU : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inler press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

: 3.65 : + 0.05 Prestroke mm Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm : 9.50 Tolerance mm : +- 1.00

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Start of delivery blocking

*NW after s.o.d. : 12.25 Tolerance : \leftarrow 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rated speed rpm : 300

Rack travel in mm: 6.20

CO3

Del. quantity	+
cm3/1000 strokes : 26.0	rack travel mm : 0.50
Tolerance	+ Tolerance mm : + 0.50
cm3/1000 strokes : + 3.0	+ Rated speed rpm : 1600
Check tolerance	1 Macea speed (piii : 1000
cm3/1000s. : +- 5.0	
	T
Spreed	†
Tolerance	
cm3/1000 strokes : 5.0	+ LOW IDLE
Check tolerance	+
cm3/1000s. : 8.0	+
	+ control lever
	position degree : 71.0
(B) SETTING OF INJECTION PUMP	tolerance degree : +- 4.0
WITH GOVERNOR	1 to contained degree
WITH GOVENHON	Control lever difference
	1
CUIDE OF EDIT TOAKE	1
GUIDE SLEEVE TRAVEL	tolerance degree : + 6.0
	†
Rated speed rpm : 1372	+ Setting point w/out bumper spring
guide sleeve	+
travel mm : 9.96	+ Rated speed rpm : 250
Tolerance mm : + 0.15	+
	\downarrow CRT mm min. : > 7.00
Rated speed rpm : 300	1
guide steeve	Testing:
	T resumg:
travel mm : 1.29	700
Tolerance mm : + 0.20	+ Rated speed rpm : 300
	† rack travel mm : 6.20
Rated speed rpm : 917	†
guide sleeve	+ Rated speed rpm : 450
travel mm : 6.76	+
Tolerance mm : $+$ 0.25	
	TORQUE CONTROL
Rated speed rpm : 590	Rated speed rpm : 1300
guide sleeve	Thatea speed i più : 1500
travel mm : 4.95	Rated speed rpm : 900
Tolerance mm : + 0.25	rack travel mm : 13.60
	Tolerance mm : + 0.10
Raced speed rpm : 1710	†
guide sleeve	+ Rated speed rpm : 600
travel mm : 13.50	+ rack travel mm : 13.05
Tolerance mm : \leftarrow 0.50	+ Tolerance mm : + 0.20
	+
	ANEROID/ALTITUDE
CONTROL LEVER	COMPENSATOR TEST
CONTROL LEVER	T COMPENSATOR TEST
andral taux-	Ţ
control lever	Ť
position degree : 120.0	+ SETTING
tolerance degree : +- 4.0	+
	Rated speed rpm : 1300
RATED SPEED	+ Pressure hPa : 1500
rack travel mm : 13.00	+
Rated speed rpm : 1365	Rated speed rpm : 1000
Tolerance 1/min : + 5	+ Pressure hPa : -
. Con Groom marries	rack travel mm : 9.95
rack travel mm : 4.00	Tolerance mm : +- 0.20
	T local differential 1. The U.20
Rated speed rpm : 1520	MERCHOEMENT
Tolerance 1/min : + 15	+ MEASUREMENT

Rated speed rpm	: 1300
Pressure hPa	: 890
rack travel mma	: 13.00
Tolerance mma	: + 0.20
Pressure hPa	: 400
rack travel mm	: 10.80
Tolerance mm	: ← 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	•	:500
Rated speed rpm	:	900
Del. quantity		
cm3/1000 strokes	:	241.0
Tolerance		
cm3/1000 strokes	2.4	- 6.0
Check tolerance		
cm3/1000S.	: +	- 8.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

Aneroid pressure			
hPa			_
Rated speed rpm	:	1	000
Del. quantity			
cm3/1000 strokes	•		123.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000S.	:	+-	3.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	9.10
Del. quantity		
cm3/1000 strokes	:	123.0
Tolerance		
cm3/1000 strokes	: +-	- 20.0
Check tolerance		
cm3/1000S.	: +-	- 25.0

LOW IDLE

Rated speed rpm	:	300
Rack travel in mm Del. quantity	:	6.20
cm3/1000 strokes	:	26.0
Tolerance cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s.	: +-	5.0
Spreed Tolerance		
cm3/1000 strokes	:	5.0
Check tolerance cm3/1000s.	:	8.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.97 Test oil : ISO 4113

Combination No. : 0 400 074 778

Injection pump

Pump designation : PES4M60C320RS185 EP type number : 0 410 064 006

Governor

Governer design. : RSF360/1900M79 Governer no. : 0 420 021 280

Cust. part No. :

Customer-spec. information

Customer : MB-PKW

Motor : OM601 023 LA

Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 148.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 690

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 17.00 Tolerance : + 0.20

Check

tolerance "NW : + 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 59.5

Tolerance cm3/1000 strokes : +- 0.7

Check tolerance cm3/1000s. : +- 1.7

Spreed Tolerance

cm3/1000 strokes : 3.0

Check tolerance 3.5 cm3/1000s. SET IDLE CONTROL LEVER POSITION Rated speed rom : 360 Rated speed rpm 900 5.90 Rack travel in mm: : +- 0.10 Tolerance mm CRT mon max. : 1.95 Del. quantity cm3/1000 strokes : 6.5 Tolerance LOW IDLE cm3/1000 strokes : +-0.5 Spreed Tolerance control lever cm3/1000 strokes : 1.0 position degree 12.0 tolerance degree : +- 2.0 (B) SETTING OF INJECTION PUMP Setting point w/out bumper spring WITH GOVERNOR Rated speed rpm : 360 rack travel man 5.90 SET IDLE AUXILIARY SPRING IDLE STAGE Rated speed rom rack travel mm : Rack travel in mm : 4.00 6.00 Tolerance mm : + 0.10 : + 0.10Tolerance mm Load pick-up FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm Rated speed rpm 900 rack travel mm 12.20 Ref. pressure ALDA / ADA hPa 1850 Rated speed rpm 900 Del. quantity cm3/1000 strokes : 59.5 1.95 CRT mm max. Tolerance cm3/1000 strokes : +-5.90 0.7 rack travel mm Check tolerance Rated speed rpm : 360 cm3/1000s. 1.7 Spreed Tolerance cm3/1000 strokes : TORQUE CONTROL 3.0 Check tolerance cm3/1000s. 3.5 Rated speed rpm 900 rack travel mm 13.80 Tolerance mm : +- 0.05 RATED SPEED : 1500 Rated speed rpm rack travel mm 12.90 : + - 0.10control lever Tolerance mm 50.0 position degree 1900 Rated speed rpm 2200 Rated speed rpm rack travel mm 12.15 8.30 : +- 0.15 rack travel mm Tolerance mm : + 0.20Tolerance mm Rated speed rpm 900 11.15 Rated speed rpm 2600 rack travel mm rack travel mm 0.50 Tolerance mm : + 0.10Tolerance mm : +- 0.50 ADJUSTMENT TEST ADA/ALDA

		1	Del. quantity	
SETTING		1	cm3/1000 strokes	÷ 43.0
		1	Tolerance	
Rated speed rpm	: 900	1	cm3/1000 strokes	: + 0.7
Ref. pressure		1	Check tolerance	
ALDA / ADA hPa	: 1600	1		: ← 1.7
rack travel mm	: -0.25	1	Spreed	
Tolerance mm	: +- 0.20	1	Tolerance	
. 0 2 0		1	cm3/1000 strokes	• 30
MEASUREMENT		1	Check tolerance	. 2.0
TIE TOOKE IE T		1	cm3/1000s.	: 3.5
Rated speed rpm	• • • • • • • • • • • • • • • • • • • •	Ι	Ciii 57 10005.	. 3.2
Ref. pressure	. 700	T	Ref. pressure	
ALDA / ADA hPa	. 1100	T	ALDA / ADA hPa	. 1100
rack travel mm		T	Rated speed rpm	
Tolerance mm		T		: 900
rocerance mm	: +- 0.10	T	Del. quantity	. /7.0
Def managemen		T	cm3/1000 strokes	: 45.0
Ref. pressure	: 750	+	Tolerance	
ALDA / ADA hPa	. /30	†	cm3/1000 strokes	
rack travel mm	: -4.30	†	Check tolerance	
Tolerance mm	: +- 0.20	+	cm3/1000s.	: +- 1.7
		+	Spreed	
		+	Tolerance	
		+	cm3/1000 strokes	
FUEL DELIVERY CHA	RACTERISTICS	+	Check tolerance	
		+	cm3/1000s.	: 3.5
Ref. pressure		+		
ALDA / ADA hPa	: 1850	+		
Rated speed rom	: 1500			
Del. quantity		+	HIGH IDLE	
cm3/1000 strokes	: 56.4	÷		
Tolerance		1	Ref. pressure	
cm3/1000 strokes	: +- 1.0	1	ALDA / ADA hPa	: 1850
Check tolerance		1	Rated speed rpm	
cm3/1000s.	: +- 2.0	1	rack travel mm	
Spreed		1	Tolerance mm	
Tolerance		1	Del. quantity	. 0.20
cm3/1000 strokes	: 3.0	1	cm3/1000 strokes	: 31.0
Check tolerance	. 3.3	1	Tolerance	. 31.3
cm3/1000s.	: 3.5	1	cm3/1000 strokes	: + 2.2
CIID 10000:	. 3.3	i	Check tolerance	
Ref. pressure		I	cm3/1000s.	: ← 3.2
ALDA / ADA hPa	: 1850	${ m I}$	Spreed	· · J. C
Rated speed rpm		Ι	Tolerance	
Spreed	. 1700	I	cm3/1000 strokes	: 3.0
Del. quantity		T	Check tolerance	. 5.0
cm3/1000 strokes	: 54.0	T	cm3/1000s.	: 3.5
	. 54.0	T	CIIIS7 10005.	: 3.5
Tolerance	: + 1.2	T		
cm3/1000 strokes	: +- 1.2	Ť	CTARTING GUEL AG	TUEDY
Check tolerance		†	STARTING FUEL DEL	TIVEKI
cm3/1000s.	: +- 2.2	†	n=4=4 1 - ·	400
Spreed		t	Rated speed rpm	: 100
Tolerance	7.0	†	rack travel mm	: > 20.10
cm3/1000 strokes	: 3.0	+	Del. quantity	F1 6
Check tolerance	mg #=	+	cm3/1000 strokes	: 54.8
cm3/1000s.	: 3.5	+	Tolerance	
		+	cm3/1000 strokes	: +- 6.0
Ref. pressure		+	Check tolerance	
ALDA / ADA hPa	: 1100	+	cm3/1000s.	: +- 7.0
Rated speed rpm	: 900	+	Spreed	

Tolerance cm3/1000 strokes : 8.0 Check tolerance 8.5 cm3/1000s. LOW IDLE катеd speed rpm : 360 rack travel mm : 5.90 Tolerance mm Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 7.8 Check tolerance cm3/1000s. : +- 2.3 Spreed Check tolerance cm3/1000s. : 1.5 control lever position degree : > 42.00 control lever position degree : < 39.50 SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION control lever position degree : 12.0 tolerance degree : + 2.0 SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR) Rated speed rpm : 360 Rack travel in mm: 13.80 Tolerance mm : \leftarrow 0.70 Del. quantity cm3/1000 strokes : 54.5 Tolerance

cm3/1000 strokes : \leftarrow 3.5

Rated speed rpm : 2600

Rack travel in mm: 0.50

: 1.80

Current A

C09

Tolerance mm : +- 0.50 Current short-

3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 360 Vacuum hPa : -450.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.97 Test oil : ISO 4113

Combination No. : 0 400 074 876

Injection pump

Pump designation : PES4M60C320RS185 EP type number : 0 410 064 006

Governor

Governer design. : RSF360/1900M84 Governer no. : 0 420 021 287

Cust. part No. :

Customer—spec. information

Customer : MB-PKW
Motor : 0M601 D23 LA

Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 148.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05
Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 17.00 Tolerance : +- 0.20

Check

tolerance *NW : +- 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 59.5

Tolerance

cm3/1000 strokes : \leftarrow 0.7

Check tolerance cm3/10COs. : +- 1.7

Spreed

,---

Tolerance cm3/1000 strokes : 3.0	- Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : 3.5	- SET IDLE CONTROL LEVER POSITION
Rated speed rpm : 360	- Rated speed rpm : 900
Rack travel in mm : 5.90 - Tolerance mm : + 0.10 -	- CRT mm max. : 1.95
Del. quantity - cm3/1000 strokes : 6.5	- LOW IDLE
Tolerance - cm3/1000 strokes : + 0.5 - Spreed	- - control lever - position degree : 12.0
Tolerance - cm3/1000 strokes : 1.0 -	tolerance degree : +- 2.0
(B) SETTING OF INJECTION PUMP	- Setting point w/out bumper spring - Rated speed rpm : 360 - rack travel mm : 5.90
WITH GOVERNOR	- SET IDLE AUXILIARY SPRING
1DLE STAGE	- Rated speed rpm : 500 - rack travel mm : 4.00
Rack travel in mm: 6.00 - Tolerance mm: : + 0.10	- Tolerance mm : +- 0.10 - - Load pick-up
	- Rated speed rpm : 200
FULL LOAD DELIVERY AT FULL LOAD STOP	- rack travel mm : 12.20 -
Rated speed rpm : 900 - Ref. pressure -	- Rated speed rpm : 900 -
ALPA / ADA hPa : 1850 Del. quantity	- CRT mm max. : 1.95
<pre>cm3/1000 strokes : 59.5 Tolerance cm3/1000 strokes : + 0.7</pre>	- rack travel mm : 5.90 - Rated speed rpm : 360 -
Check tolerance cm3/1000s. : + 1.7 - Spreed -	TORQUE CONTROL
Tolerance - cm3/1000 strokes : 3.0 -	- Rated speed rpm : 900
Check tolerance cm3/1000s. : 3.5	rack travel mm : 13.80 Tolerance mm : +- 0.05
RATED SPEED	- Rated speed rpm : 1500 - rack travel mm : 12.90 - Tolerance mm : + 0.10
-	-
control lever position degree : 50.0	- Rated speed rpm : 1900 - rack travel mm : 12.15 - Tolerance mm : + 0.15
Rated speed rpm : 2150 - rack travel mm : 6.60 - Tolerance mm : + 0.20 -	Rated speed rpm : 500 rack travel mm : 15.30 Tolerance mm : + 0.30
- 1	- Tolerance mm : + 0.30
Rated speed rpm : 2600 - rack travel mm : 0.50 -	- Rated speed rpm : 900

rack travel mm : 11.15 Tolerance mm : + 0.10	Check tolerance cm3/1000s. : 3.5
ADJUSTMENT TEST ADA/ALDA	Ref. pressure ALDA / ADA hPa : 1100 Rated speed rpm : 900
SETTING	+ Del. quantity + cm3/1000 strokes : 43.0
Rated speed rpm : 900 Ref. pressure	Tolerance cm3/1000 strokes : + 0.7
ALDA / ADA hPa : 1600 rack travel mm : -0.25	+ Check tolerance + cm3/1000s. : + 1.7
Tolerance mm : + 0.20	+ Spreed + Tolerance
MEASUREMENT	cm3/1000 strokes : 3.0 Check tolerance
Rated speed rpm : 900 Ref. pressure	cm3/1000s. : 3.5
ALDA / ADA hPa : 1100 rack travel mm : -2.65	Ref. pressure ALDA / ADA hPa : 1850
Tolerance mm : + 0.10	Rated speed rpm : 500 Del. quantity
Ref. pressure ALDA / ADA hPa : 750	cm3/1000 strokes : 64.3
rack travel mm : -4.30 Tolerance mm : + 0.20	cm3/1000 strokes : +- 2.0 Check tolerance
Toter arice min	cm3/1000s. : +- 3.0 Tolerance
FUEL DELIVERY CHARACTERISTICS	- cm3/1000 strokes : 3.0 - Check tolerance
	cm3/1000s. : 3.5
Ref. pressure ALDA / ADA hPa : 1850	Ref. pressure
Rated speed rpm : 1500 Del. quantity	+ ALDA / ADA hPa : 1:00 Rated speed rpm : 900
cm3/1000 strokes : 56.4 Tolerance	Del. quantity cm3/1000 strokes : 43.0
cm3/1000 strokes : ← 1.0 Check tolerance	+ Tolerance + cm3/1000 strokes : + 0.7
cm3/1000S. : +- 2.0 Spreed	+ Check tolerance - cm3/1000S. : +- 1.7
Tolerance cm3/1000 strokes : 3.0	+ Spreed + Tolerance
Check tolerance cm3/1000s. : 3.5	cm3/1000 strokes : 3.0 Check tolerance
Ref. pressure	+ cm3/1000s. : 3.5
ALDA / ADA hPa : 1850 Rated speed rpm : 1900	
Spreed Del. quantity	+ HIGH IDLE
cm3/1000 strokes : 54.0 Tolerance	+ Ref. pressure + ALDA / ADA hPa : 1850
cm3/1000 strokes : +- 1.2 Check tolerance	Rated speed rpm : 2150 rack travel mm : 6.60
cm3/1000s. : +- 2.2 Spreed	+ Tolerance mm : + 0.20 + Del. quantity
Tolerance cm3/1000 strokes : 3.0	cm3/1000 strokes : 21.4 Tolerance
	+ cm3/1000 strokes : +- 2.2

Check tolerance		
cm3/1000s.	: + 3.2	
Spreed		
Tolerance		
cm3/1000 strokes	: 3.0	
Check tolerance	-7 F	
cm3/1000s.	: 3.5	
STARTING FUEL DEL	TVFRY	
Rated speed rpm	: 100 : > 20.10	
rack travel mm	: > 20.10	
Del. quantity	F/ 0	
cm3/1000 strokes Tolerance	: 54.8	
cm3/1000 strokes	: + 6.0	
Check tolerance		
cm3/1000s.	: + 7.0	
Spreed		
Tolerance		
cm3/1000 strokes	: 8.0	
Check tolerance cm3/1000s.	: 8.5	
CHD7 10005.	. 0.5	
LOW IDLE		
	: 360	
LOW IDLE Rated speed rpm rack travel mm	: 360 : 5.90	
Rated speed rpm rack travel mm Tolerance mm	=	
Rated speed rpm rack travel mm Tolerance mm Del. quantity	: 5.90 : + 0.10	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes	: 5.90	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance	: 5.90 : + 0.10 : 7.8	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s.	: 5.90 : + 0.10	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance	: 5.90 : + 0.10 : 7.8 : + 2.3	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 5.90 : + 0.10 : 7.8	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance	: 5.90 : + 0.10 : 7.8 : + 2.3	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s.	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s.	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s.	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s.	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s.	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s. SETTING PNEUMATIC (PLA) POSITION control lever	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s. SETTING PNEUMATIC (PLA) POSITION	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s. SETTING PNEUMATIC (PLA) POSITION control lever	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s. SETTING PNEUMATIC (PLA) POSITION control lever position degree tolerance degree	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5 FAST IDLE (PLA) : 12.0 : + 2.0	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s. SETTING PNEUMATIC (PLA) POSITION control lever position degree tolerance degree SETTING/TESTING E	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5 FAST IDLE (PLA) : 12.0 : + 2.0	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s. SETTING PNEUMATIC (PLA) POSITION control lever position degree tolerance degree SETTING/TESTING EREGULATION (ELR)	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5 FAST IDLE (PLA) : + 2.0 : + 2.0	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s. SETTING PNEUMATIC (PLA) POSITION control lever position degree tolerance degree SETTING/TESTING E	: 5.90 : + 0.10 : 7.8 : + 2.3 : 1.5 FAST IDLE (PLA) : + 2.0 : + 2.0	

Del. quantity
cm3/1000 strokes : 54.5
Tolerance
cm3/1000 strokes : + 3.5

Current A : 1.80

Rated speed rpm : 2600

Rack travel in mm : 0.50
Tolerance mm : + 0.50

Current shortduration A : 3.00

Starting test

Pated speed rpm : 100

Current A : 1.80

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 360 Vacuum hPa : -450.0

End of test specification sheet

Rack travel in mm : 13.80 Tolerance mm : + 0.70

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 14.10.97 Edition Test oil : 14.10.97

Combination No. : 0 400 074 883

Injection pump

Pump designation : PES4M60C320RS185 EP type number : 0 410 064 006

Governor

Governer design. : RSF375/1900M78 Governer no. : 0 420 021 274

Cust. part No. :

Customer-spec. information Customer : MB-PKW

: 0M601 D23 LA Motor

Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

: 148.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 2.05 Tolerance mm : + 0.05 Cheak : + 0.10 tolerance mm

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 17.00 Tolerance : + 0.20 Check

tolerance °NW : +- 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 59.5

Tolerance

cm3/1000 strokes : + 0.7

Check tolerance cm3/1000s. : +- 1.7

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance +	
cm3/1000s. : 3.5	SET IDLE CONTROL LEVER POSITION
Rated speed rpm : 375	
Rack travel in mm: 5.90	Rated speed rpm : 900
Tolerance mm : + 0.10 Del. quantity	CRT mm max. : 1.95
cm3/1000 strokes : 6.5	LOUI TOLE
Tolerance cm3/1000 strokes : +- 0.5 Spreed	LOW IDLE
Tolerance	control lever
cm3/1000 strokes : 1.0	position degree : 12.0 tolerance degree : + 2.0
(B) SETTING OF INJECTION PUMP	Setting point w/out bumper spring
WITH GOVERNOR	Rated speed rpm : 375 rack travel mm : 5.90
IDLE STAGE	SET IDLE AUXILIARY SPRING
1	Rated speed npm : 500
Rack travel in mm: 6.00	rack travel mm : 4.20
Tolerance mm : + 0.10	Tolerance mm : + 0.10
	Load pick-up
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 200
Rated speed rpm : 900	rack travel mm : 13.00
Ref. pressure	
ALDA / ADA hPa : 1850	Rated speed rpm : 900
Del. quantity cm3/1000 strokes : 59.5	CRT mm max. : 1.95
Tolerance + 0.7 +	rack travel mm : 5.90
Check tolerance	Rated speed rpm : 375
cm3/1000s. : + 1.7	
Spreed +	
cm3/1000 strokes : 3.0	TORQUE CONTROL
Check tolerance	
cm3/1000s. : 3.5	Rated speed rpm : 900 rack travel mm : 13.80
	rack travel mm : 13.80 Tolerance mm : +- 0.05
RATED SPEED	
+	Rated speed rpm : 1500
t de la companya de l	rack travel mm : 12.90 Tolerance mm : +- 0.10
control lever + position degree : 50.0 +	Toterance mm : += U.10
position degree : 3010	Rated speed rpm : 1900
Rated speed rpm : 2200	rack travel mm : 12.15
rack travel mm : 8.30	Tolerance mm : + 0.10
Tolerance mm : + 0.20	Rated speed rpm : 900
Rated speed rpm : 2600	rack travel mm : 11.15
rack travel mm : 0.50	Tolerance mm : +- 0.10
Tolerance mm : + 0.50	
‡	ADJUSTMENT TEST ADA/ALDA
ſ	in the control of the

		+ Del. quantity
SETTING		cm3/1000 strokes : 43.0
		+ Tolerance
Rated speed rpm	: 900	+ cm3/1000 strokes : + 0.7
Ref. pressure		Check tolerance
ALDA / ADA hPa	: 1600	+ cm3/1000s. : +- 1.7
rack travel mm	: -0.25	Spreed
Tolerance mm	: + 0.20	+ Tolerance
		+ cm3/1000 strokes : 3.0
MEASUREMENT		Check tolerance
		+ cm3/1000s. : 3.5
Rated speed rpm	: 900	1 3.9
Ref. pressure	. ,00	Ref. pressure
ALDA / ADA hPa	: 1100	ALDA / ADA hPa : 1100
rack travel mm		Rated speed rpm : 900
Tolerance mm	: + 0.10	Del. quantity
roter ance man	. ' 0.10	cm3/1000 strokes : 43.0
Ref. pressure		Tolerance 43.0
ALDA / ADA hPa	. 750	
rack travel mm		+ cm3/1000 strokes : +- 0.7
		+ Check tolerance
Tolerance mm	: - 0.20	+ cm3/1000s. : + 1.7
		+ Spreed
		+ Tolerance
FUEL DEL TUEDY CUI	DACTEDIOTYCO	
FUEL DELIVERY CHA	RACTERISTICS	+ Check tolerance
		+ cm3/1000s. : 3.5
Ref. pressure		†
ALDA / ADA hPa		+
kated speed rpm	: 150G	
Del. quantity		+ HIGH IDLE
cm3/1000 strokes	: 56.4	†
Tolerance		† Ref. pressure
cm3/1000 strokes	: ← 1.0	+ ALDA / ADA hPa : 1850
Check tolerance		Rated speed rpm : 2200
cm3/1000s.	: +- 2.0	+ rack travel mm : 8.30
Spreed		→ Tolerance mm : + 0.20
Tolerance		+ Del. quantity
cm3/1000 strokes	: 3.0	+ cm3/1000 strokes : 31.0
Check tolerance		† Tolerance
cm3/1000s.	: 3.5	+ cm3/1000 strokes : +- 2.2
		Check tolerance
Ref. pressure		+ cm3/1000s. : +- 3.2
ALDA / ADA hPa	: 1850	+ Spreed
Rated speed rpm		† Tolerance
Spreed		+ cm3/1000 strokes : 3.0
Del. quantity		Check tolerance
cm3/1000 strokes	: 54.0	+ cm3/1000s. : 3.5
Tolerance		+
cm3/1000 strokes	: ← 1.2	
Check tolerance	•	STARTING FUEL DELIVERY
cm3/1000s.	: +- 2.2	+
Spreed	-	+ Rated speed rpm : 100
Tolerance		+ rack travel mm : > 20.10
cm3/1000 strokes	: 3.0	+ Del. quantity
Check tolerance		+ cm3/1000 strokes : 54.8
cm3/1000s.	: 3.5	+ Tolerance
J.,, , , , , , , , , , , , , , , , , , ,		+ cm3/1000 strokes : +- 6.0
Ref. pressure		+ Check tolerance
ALDA / ADA hPa	: 1100	cm3/1000s. : +- 7.0
Rated speed rpm		Spreed
Marca speed rpill	. /00	1 001.000

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s.

: 8.5

LOW IDLE

Rated speed rpm : 375

Del. quantity

cm3/1000 strokes : 7.8

Check tolerance

cm3/1000s.

: + 2.3

Spreed

Check tolerance

cm3/1000s.

1.5

control lever

position degree : > 42.00

control lever

position degree : < 39.50

SETTING PNEUMATIC FAST IDLE (PLA)

(PLA) POSITION

control lever

position degree : 12.0

tolerance degree : + 2.0

Rated speed rpm : 425

Rack travel in mm: 7.65

Tolerance mm : +- 0.80

Del. quantity

cm3/1000 strokes : 17.3

Tolerance

cm3/1000 strokes : +- 4.5

Check tolerance

cm3/1000s.

: **←** 5.5

Vacuum hPa

: 450.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm :

375

Vacuum hPa : -450.0

C17

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 14.10.97 : ISO 4113

Combination No. : 0 401 856 158

Injection pump

Pump designation : PE6P110A721RS369 EP type number : 0 411 816 121

Gavernor

Governer design. : RQV250...1300PA413

: -4

Governer no.

: 0 421 813 732

Cust. part No. :

Customer-spec. information

Customer : HAEP

Motor

: WD615.61/71

Power KW

: 191.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar :

1.5

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

173.5

Tolerance bar

: +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter :

1.5

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 2.85 : +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 : + 1.50 Tolerance mm

Firing order : 1-5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance *NW : + 0.75

Start of delivery mark

Tolerance : \leftarrow 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.85

: +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 146.0

	+ Rated speed rpm : 1450
Tolerance	guide sleeve
cm3/1000 strokes : +- 1.0	
clid/fuod strokes : += 1.0	+ travel mm : 10.20
	+ Tolerance mm : +- 0.20
Check tolerance	†
$cm3/1000$ s. : \leftarrow 4.0	
	+ GUIDE SLEEVE POSITION
Spreed	1
	1
Tolerance	+ control lever
	(
cm3/1000 strokes : 4.0	position degree : - 1
	+ Rated speed rpm : 1390
Check tolerance	†
cm3/1000s. : 7.5	+ Rack travel in mm : 16.50
	+ Tolerance mm : +- 1.30
	1
Rated speed rpm : 250	FULL LOAD DELIVERY AT FULL LOAD STOP
nated speed i pill . 200	TOCK LOAD DELIVERY AT FOLL LOAD STOP
0.00	7 700
Rack travel in mm: 8.80	+ Rated speed rpm : 1300
Tolerance mm : + 0.10	+ Aneroid pressure
Del. quantity	+ hPa : 700
cm3/1000 strokes : 21.0	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 146.0
cm3/1000 strokes : + 3.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000s. : + 5.5	+ Check tolerance
Spreed	+ cm3/1000s. : + 4.0
Tolerance	+ Spreed
cm3/1000 strokes : 5.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : 4.0
cm3/1000s. : 7.5	+ Check tolerance
	+ cm3/1000s. : 7.5
	1
(B) SETTING OF INJECTION PUMP	1
WITH GOVERNOR	
WITH GOVERNOR	201700 15150
	+ CONTROL LEVER
	†
GUIDE SLEEVE TRAVEL	+ control lever
	+ position degree : 106.0
Rated speed rpm : 1340	+ tolerance degree : +- 4.0
guide sleeve	+
travel mm : 8.70	RATED SPEED
Tolerance mm : + 0.10	rack travel mm : 12.80
TO CEL CHILD . TO U. TU	
Dated around non . SEO	Rated speed rpm : 1345
Rated speed rpm : 250	+ Tolerance 1/min : +- 5
guide sleeve	t
travel mm : 0.70	+ rack travel mm : 4.00
Tolerance mm : + 0.20	+ Rated speed rpm : 1460
-	+ Tolerance 1/min : + 15
Rated speed rpm : 500	1
guide sleeve	rack travel mm : 0.50
travel mm : 2.70	+ Tolerance mm : +- 0.50
Tolerance mm : + 0.30	+ Rated speed rpm : 1550
	†
Rated speed rpm : 800	+
guide sleeve	+
travel mm : 4.70	ļ
Tolerance mm : + 0.30	LOW IDLE
The second secon	

control lever position degree tolerance degree	: 72.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 10.20
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 250 : 8.80 : ← 0.10
Rated speed rpm	: 375
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 13.85 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm.	: 700 : 13.85 : +- 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 700 : 700 : 13.85 : + 0.05
Rated speed rpm	: 700
Pressure hPa rack travel mm Tolerance mm	: 700 : - : 12.10 : +- 0.10
MEASUREMENT	
Rated speed rpm	: 700
Pressure hPa rack travel mm Tolerance mm	: 320 : 13.00 : ← 0.10
Pressure hPa rack travel mm Tolerance mm	: 390 : 13.55 : + 0.05

Rated speed rpm Rated speed rpm	: > 100 : < 170
Check speed 1/min Check	: > 80
speed 1/min	: < 190
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm Del. quantity	: 700 : 700
cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 2.0 : +- 5.0
Aneroid pressure hPa Rated speed rpm	: - : 700
Del. quantity cm3/1000 strokes Tolerance	: 102.0
cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000s.	: +- 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm Del. quantity	: 100
cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 10.0 : +- 14.0
CIIIO/ TUUUS.	. +- 14.0
LOW TOLE	
LOW IDLE	
Rated speed rpm	: 250
Rack travel in mm Tolerance mm	: 8.80 : +- 0.10
Del. quantity cm3/1000 strokes Tolerance	: 21.0
cm3/1000 strokes	: +- 3.0

Start interlock

Check tolerance cm3/1000s. : + 5.5 Spreed Tolerance cm3/1000 strokes :

5.0

Check tolerance cm3/1000s. : 7.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.10.97 Edition : 15.10.97 : 180 4113 Test oil

Combination No. : 0 402 046 864

Injection pump

Pump designation : PES6P120A320RS3337

: -1

EP type number : 0 412 026 772

Governor

Governer design. : RQV300...1250PA1149

: -1K

Governer no. : 0 421 815 421

Cust. part No. : CCEP 5142B 66-219

Customer-spec. information

Customer : RENAULT V.I.

Motor : MIDR 06-02-26 W4 Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5

Overflow quantity

min. L/h : 125 Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 208.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.15 Tolerance mm : + 0.05 Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 13.00 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

: +- 0.75 tolerance °NW

Start of delivery mark

 $^{\circ}$ NW after s.o.d. : -0.35

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

: 21.00

and maximum rack

: 13.00 travel

Difference * CS		
Difference co	: 2.00	+ Tolerance mm : +- 0.15
		Rated speed rpm : 300 guide sleeve
CRT ZERO POSITION		travel mm : 1.31
		+ Tolerance mm : +- 0.20
		1
Rack travel in mm	: 12.80	Rated speed rpm : 876
Tolerance mm	: ← 0.05	guide sleeve
		travel mm : 6.02
		+ Tolerance mm : + 0.25
BASIC SETTING		+
		+ Rated speed rpm : 510
Rated speed rpm	: 1250	+ guide sleeve
		+ travel mm : 3.59
Del. quantity		+ Tolerance mm : ← 0.25
cm3/1000 strokes	: 194.0	+
		Rated speed rpm : 1600
Tolerance		guide sleeve
cm3/1000 strokes	: + 1.0	+ travel mm : 13.50
^2		+ Tolerance mm : + 0.50
Check tolerance		†
cm3/1000s.	: + 4.0	
D		+ GUIDE SLEEVE POSITION
Spreed		†
Tolerance		control lever
sm3/1000 strokes	. 50	position degree : - 1
SIND ALTONES	. 2.9	Rated speed rpm : 1415
Check tolerance		T rated speed (pill . 141)
cm3/1000s.	: 9.0	Rack travel in mm: 12.15
, 10000.	. ,	Tolerance mm : +- 2.03
Rated speed rpm	: 300	FULL LOAD DELIVERY AT FULL LOAD STOP
		FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	: -8.30	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250
Rack travel in mm Tolerance mm	: -8.30	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure
Rack travel in mm Tolerance mm Del. quantity	: -8.30 : ← 0.10	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: -8.30 : ← 0.10	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	: -8.30 : + 0.10 : 22.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: -8.30 : + 0.10 : 22.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 194.0
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: -8.30 : + 0.10 : 22.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: −8.30 : ← 0.10 : 22.0 : + 1.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : +- 1.0
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: -8.30 : ← 0.10 : 22.0 : ← 1.0 : ← 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: -8.30 : ← 0.10 : 22.0 : ← 1.0 : ← 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: −8.30 : ← 0.10 : 22.0 : ← 1.0 : ← 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: −8.30 : ← 0.10 : 22.0 : ← 1.0 : ← 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: -8.30 : + 0.10 : 22.0 : + 1.0 : + 5.0 : 8.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: −8.30 : + 0.10 : 22.0 : + 1.0 : + 5.0 : 8.0 : 12.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: −8.30 : + 0.10 : 22.0 : + 1.0 : + 5.0 : 8.0 : 12.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: −8.30 : + 0.10 : 22.0 : + 1.0 : + 5.0 : 8.0 : 12.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: −8.30 : + 0.10 : 22.0 : + 1.0 : + 5.0 : 8.0 : 12.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: -8.30 : + 0.10 : 22.0 : + 1.0 : + 5.0 : 8.0 : 12.0 JECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0 CONTROL LEVER
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: -8.30 : + 0.10 : 22.0 : + 1.0 : + 5.0 : 8.0 : 12.0 JECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0 CONTROL LEVER control lever
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF IN. WITH GOVERNOR	: -8.30 : ← 0.10 : 22.0 : + 1.0 : + 5.0 : 8.0 : 12.0 JECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0 CONTROL LEVER control lever position degree : 296.0
Rack travel in mm Tolerance mm Del. cuantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF IN. WITH GOVERNOR GUIDE SLEEVE TRAVE	: -8.30 : ← 0.10 : 22.0 : + 1.0 : + 5.0 : 8.0 : 12.0 JECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0 CONTROL LEVER control lever
Rack travel in mm Tolerance mm Del. cuantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF IN. WITH GOVERNOR	: -8.30 : ← 0.10 : 22.0 : + 1.0 : + 5.0 : 8.0 : 12.0 JECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure hFa : 1000 Del. quantity cm3/1000 strokes : 194.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0 CONTROL LEVER control lever position degree : 296.0

rack travel mm Rated speed rpm Tolerance 1/min	
rack travel mm Rated speed rpm Tolerance 1/min	
rack travel mm Tolerance mm Rated speed rpm	: +- 0.50
LOW IDLE	
control lever position degree tolerance degree	: 245.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 200
CRT mm min.	: < -7.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : -8.30 : +- 0.10
Rated speed rpm	: 400
TORQUE CONTROL Rated speed rpm	: 1250
Rated speed rpm rack travel mm Tolerance mm	: 850 : −1.75 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 350 : -1.50 : + 0.30
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm	: 1000 : 1000 : -1.40

Pressure hPa rack travel mm Tolerance mm	: -3.55 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 1000
Pressure hPa rack travel mm Tolerance mm	: 160 : -3.10 : +- 0.15
Pressure hPa rack travel mm Tolerance mm	: 280 : -2.05 : +- 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 175 : < 240
Check speed 1/min	: > 155
Check	
speed 1/min	: < 260
FUEL DELIVERY CHA	ARACTERISTICS
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm	ARACTERISTICS : 1000
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 1000 : 850 : 139.0
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1000 : 850 : 139.0 : + 3.0
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1000 : 850 : 139.0
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure	: 1000 : 850 : 139.0 : + 3.0 : ← 6.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tclerance cm3/1000s. Aneroid pressure hPa Rated speed rpm	: 1000 : 850 : 139.0 : + 3.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa	: 1000 : 850 : 139.0 : + 3.0 : + 6.0
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tclerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1000 : 850 : 139.0 : + 3.0 : + 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 102.0

Rated speed rpm : 1000

Tolerance		
cm3/1000 strokes	; +-	15.0
Check tolerance		
cm3/1000s	: +-	19 N

CM	TRI	_
(144	TDi	-

Rated speed rpm	:	300	
Rack travel in mm Tolerance mm Del. quantity	: +	-8.30 0.10	
cm3/1000 strokes	:	22.0	
Tolerance cm3/1000 strokes	: +-	1.0	
Check tolerance cm3/1000s. Spreed	: +-	5.0	
Tolerance cm3/1000 strokes	:	8.0	
Check tolerance cm3/1800s.	:	12.0	

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.10.97 Test oil : ISO 4113

Combination No. : 0 402 610 805

Injection pump

Pump designation : PE12P12OA5OOLS7916 EP type number : 0 412 620 850

Governor

Governer design. :
Governer no. :

Cust. part No. : 0280743802

Customer-spec. information

Customer : MTU : 12V18:

Motor : 12V183-02 Power KW : 455.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1/3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 240 Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.35 Tolerance mm : + 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 12-1-5-9-8

: - 3- 4- 11- 10 : - 2- 6- 7

Phasing : 0-45-60-105-120

: -165-180-225-240 : -285-300-345

: -285-300-34 : +- 0.50

Check

Tolerance

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : \leftarrow 0.10

Check

tolerance *NW : + 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 7.80 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 184.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 11.0 Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000 strokes : + 6.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000 strokes : 14.0 (B) SEITING OF INJECTION FUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 184.0		
Tolerance cm3/1000 strokes : 184.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 11.0 Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000s strokes : 10.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000s. : 14.0 (B) SEITING OF INJECTION PUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity		
Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 11.0 Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. : 14.0 (B) SETTING OF INJECTION FUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity		: 184.0
Spreed Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 11.0 Rated speed rpm: 300 Del. quantity cm3/1000 strokes: 18.0 Tolerance cm3/1000 strokes: + 3.0 Check tolerance cm3/1000s.: + 6.0 Spreed Tolerance cm3/1000 strokes: 10.0 Check tolerance cm3/1000 strokes: 14.0 (B) SEITING OF INJECTION FUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm: 750 Aneroid pressure hPa : - Del. quantity		: + 1.0
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 11.0 Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. : 14.0 (B) SEITING OF INJECTION PUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity		: + 4.0
Check tolerance cm3/1000s.: 11.0 Rated speed rpm: 300 Del. quantity cm3/1000 strokes: 18.0 Tolerance cm3/1000 strokes: + 3.0 Check tolerance cm3/1000s.: + 6.0 Spreed Tolerance cm3/1000 strokes: 10.0 Check tolerance cm3/1000 strokes: 10.0 Check tolerance cm3/1000 strokes: 14.0 (B) SEITING OF INJECTION FUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm: 750 Aneroid pressure hPa : - Del. quantity	Spreed	
Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. : 14.0 (B) SEITING OF INJECTION PUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity		: 8.0
Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. : 14.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity		: 11.0
Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. : 14.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity		
cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. : 14.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity		: 300
cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. : 14.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity	cm3/1000 strokes	: 18.0
cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. : 14.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity		: 3.0
Tolerance cm3/1000 strokes: 10.0 Check tolerance cm3/1000s.: 14.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm: 750 Aneroid pressure hPa: - Del. quantity	cm3/1000s.	
Check tolerance cm3/1000s. : 14.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity	Tolerance	: 10.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity	Check tolerance	_
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity		
Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity		ECTION PUMP
Aneroid pressure hPa : - Del. quantity	FULL LOAD DELIVERY	AT FULL LOAD STOP
Aneroid pressure hPa : - Del. quantity		: 750
Del. quantity	Aneroid pressure	: -
	Del. quantity	: 184.0

TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 750 : 7.80 : +- 0.10
LOW IDLE	
Rated speed rpm	: 300
Del. quantity cm3/1000 strokes Tolerance	: 18.0
cm3/1000 strokes	: - 3.0
Check tolerance cm3/1000s. Spreed	: +- 6.0
	: 10.0
Check tolerance cm3/1000s.	: 14.0

End of test specification sheet

Tolerance

Spreed

Check tolerance cm3/1000s.

Check tolerance cm3/1000s.

Tolerance cm3/1000 strokes :

cm3/1000 strokes : \leftarrow 1.0

: +- 4.0

: 11.0

8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Fdition : 20.10.95 Test oil : ISO 4113

Combination No. : 0 402 646 623

Injection pump

Pump designation : PE6P120A320RS7288

: -10

: 0 412 626 918 EP type number

Governor

Governer design. : RQV250...900PA1069

: -1

: 0 421 814 070 Governer no.

Cust. part No. : 866141 PO4 v. 10/94

Customer-spec. information Customer : PENTA : TAD 1030P Motor

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 457 413 010

Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.45 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

: +- U.75 tolerance "NW

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rack travel in mm: 7.70 Tolerance mm : ← 0.30

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL Rated speed rpm 949 guide sleeve travel mm 7.39 Tolerance mm : + 0.25 Rated speed rpm : 250 guide sleeve 1.12 travel mm Tolerance mm : + 0.25: 657 Rated speed rpm guide sleeve 5.07 travel mm : +- 0.25 Tolerance mm Rated speed rpm 315 guide sleeve 1.98 travel mm Tolerance mm : + 0.25 Rated speed rpm : 365 guide sleeve 2.63 travel mm : +- 0.25 Tolerance mm Rated speed rpm : 420 guide sleeve 3.17 travel mm : +- 0.25 Tolerance mm : 1290 Rated speed rpm guide sleeve travel mm 11.50 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever position degree Rated speed rpm	: - 1 : 1150
Rack travel in mm Tolerance mm	: 9.00 : ← 3.00
CONTROL LEVED	

CONTROL LEVER

control lever			
position degree	:		119.0
tolerance degree	:	+-	4.0

RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 12.45 : 935 : +- 5
rack travel mm	: 4.00
Rated speed rpm	: 1075
Tolerance 1/min	: + 15
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1150

1	WO.	ID	1 5
L	.vw	10	ᆫ

control lever position degree tolerance degree	:		.0 .0
Setting point w/o	ut	bumper	spring

Rated	speed	rpm	:	150

CRT mm min.	: >	9.00
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Testing:

Rated speed rpm	:	250
rack travel mm	:	7.70
Tolerance mm	: +	-0.30

Rated	eneed	COM		350
rateu	Sheed	COM	•	220

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	: 500
Pressure hPa	: 1500
rack travel mm	: 13.45
Tolerance mm	: + 0.05
Rated speed rpm	: 500
Pressure hPa	: -
rack travel mm	: 10.00
Tolerance mm	: + 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 200 rack travel mm : 10.30 Tolerance mm : + 0.10

Pressure hPa : 1090 rack travel mm : 13.15 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 700
Del. quantity

cm3/1000 strokes : 176.0

Tolerance

cm3/1000 strokes : \leftarrow 1.0

Check tolerance

cm3/1000s. : +- 4.0

LOW IDLE

Rack travel in mm : 7.70 Tolerance mm : + 0.30

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.10.97 Test oil : ISO 4113

Combination No. : 0 402 646 676

Injection pump

Pump designation : PE6P12OA32ORS7439 EP type number : 0 412 626 966

Governor

Governer design. : RQV235...1050PA1347

Governer no. : 0 421 814 194

Cust. part No. : 836354759

Customer-spec. information

Customer : SISU 612 N Motor : 612 DWI EURO II Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : ← 1.0

Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : \leftarrow 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : + 0.50

Check

tolerance *NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.00 Tolerance mm : \leftarrow 0.05

Del. quantity

cm3/1000 strokes : 265.0

Tolerance + 1.0 +	<pre>guide sleeve travel mm : 11.50 Tolerance mm : +- 0.50</pre>
Check tolerance cm3/1000s. : + 4.0	CUTNE OF FUE PROTECTION
Spreed	GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : 7.0	control lever position degree : - 1 Rated speed rpm : 1174
Check tolerance cm3/1000s. : 10.0	Rack travel in mm : 11.00 Tolerance mm : + 1.30
Rated speed rpm : 325	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 6.60 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 70.0 Tolerance cm3/1000 strokes: + 4.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes: 5.0 Check tolerance cm3/1000 strokes: 8.0	Rated speed rpm : 700 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 265.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000 strokes : 7.0 Check tolerance
WITH GOVERNOR +	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
Rated speed rpm : 1108 + guide sleeve	position degree : 49.0 tolerance degree : +- 4.0
travel mm : 8.51 Tolerance mm : + 0.15	control lever position degree : 115.0 tolerance degree : + 4.0
Rated speed rpm : 325 guide sleeve travel mm : 1.18 Tolerance mm : + 0.20	RATED SPEED rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : +- 5
Rated speed rpm : 730 guide sleeve travel mm : 4.60 Tolerance mm : + 0.25	rack travel mm : 4.00 Rated speed rpm : 1180 Tolerance 1/min : + 15
Rated speed rpm : 470 guide sleeve travel mm : 2.76 Tolerance mm : + 0.25	rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1280
Rated speed rpm : 1320	

LOW IDLE

control lever

position degree : 83.0 tolerance degree : +- 4.0

control Lever

position degree : 16.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. :> 8.20

Testing:

Rated speed rpm : 325 rack travel mm : 6.60 Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.00
Tolerance mm : + 0.05

Rated speed rpm : 1050 rack travel mm : 12.00 Tolerance mm : $\leftarrow 0.10$

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 Pressure hPa : 1500 rack travel mm : 12.00 Tolerance mm : + 0.05

Rated speed rpm : 500 Pressure hPa : rack travel mm : 9.50
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 800 rack travel mm : 2.20

D05

Tolerance mm : \leftarrow 0.20

Pressure hPa : 420 rack travel mm : 0.25 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 1500 Rated speed rpm : 1050

Del. quantity

cm3/1000 strokes : 262.0 Tolerance

cm3/1000 strokes : +- 4.0

Check tolerance cm3/1000s. : + 6.0

Spreed

Tolerance cm3/1000 strokes : 10.0

cm3/1000 service Check tolerance 14.0

Aneroid pressure

hPa Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 182.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.50 Tolerance mm : \leftarrow 0.20

Del. quantity

cm3/1000 strokes : 123.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm: 6.60

Tolerance mm : +- 0.10

Del. quantity		
cm3/1000 strokes	:	70.0
Tolerance		
cm3/1000 strokes	: +-	4.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	5.0
Check tolerance		
cm3/1000s.	:	8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.10.97 : ISO 4113

Combination No. : 0 402 646 700

Injection pump

Pump designation : PE6P120A320LS7917 EP type number : 3 412 626 972

Governor

Governer design. : RQV350...1050PA1366

Governer no. : 0 421 814 204

Cust. part No. : 0270744002

Customer-spec. information Customer : MB-NFZ Motor : 0M401 LA Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : \leftarrow 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity min. l/h : 120
Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : \leftarrow 0.10

Check

tolerance $^{\circ}NW$: \leftarrow 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050

		1
Rack travel in mm Tolerance mm	: 13.90 : + 0.05	Rated speed rpm : 570 guide sleeve
Del. quantity cm3/1000 strokes	: 218.0	travel mm : 3.57 Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes	: + 1.0	Rated speed rpm : 1204 guide sleeve travel mm : 10.00
Check tolerance		Tolerance mm : + 0.25
cm3/1000s.	: +- 4.0	Rated speed rpm : 1300 guide sleeve
Spreed		travel mm : 11.50 Tolerance mm : +- 0.50
Tolerance cm3/1000 strokes	: 5.0	
Check tolerance	· 9.0	GUIDE SLEEVE POSITION
Chis/ 10003.		control lever position degree : - 1 Rated speed rpm : 1160
Rated speed rpm	: 350	Rack travel in mm : 12.90
Rack travel in mm Tolerance mm Del. quantity	: 5.00 : + 0.10	Tolerance mm : +- 1.30
cm3/1000 strokes Tolerance	: 19.0	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes Check tolerance	: +- 3.0	Rated speed rpm : 1050 Aneroid pressure
cm3/1000s. Spreed	: + 6.0	hPa : 1000 H Del. quantity
Tolerance cm3/1000 strokes	: 6.0	cm3/1000 strokes : 218.0 Tolerance
Check tolerance cm3/1000s.	: 10.0	cm3/1000 strokes : + 1.0 Check tolerance
(B) SETTING OF IN	JECTION DIMO	- cm3/1000s. : +- 4.0 - Spreed - Tolerance
WITH GOVERNOR	JECTION FORM	cm3/1000 strokes : 5.0 Check tolerance
GUIDE SLEEVE TRAVE		- cm3/1000s. : 9.0
Rated speed rpm	: 1106	
and the second second		CONTROL LEVER
guide sleeve travel mm Tolerance mm	: + 0.15	control lever position degree : 116.0
Rated speed rpm guide sleeve	: 350	tolerance degree : +- 4.0
travel mm Tolerance mm	: 1.48 : + 0.20	RATED SPEED : 12.90
Rated speed rpm	: 900	Rated speed rpm : 1095 Tolerance 1/min : +- 5
guide sleeve travel mm Tolerance mm	: 5.69 : + 0.25	rack travel mm : 4.00 Rated speed rpm : 1170
		•

Tolerance 1/min : + 15 rack travel mm : 0.75Tolerance mm : $\leftarrow 0.75$ Rated speed rpm : 1300 LOW IDLE control lever position degree : 66.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 250 CRT mm min. : > 7.10 Testing: Rated speed rpm : 350 rack travel mm : 5.00 Tolerance mm : + 0.10 Rated speed rpm : 390 TORQUE CONTROL Rated speed rpm : 1050 rack travel mm : 13.90
Tolerance mm : + 0.05 Rated speed rpm : 700 rack travel mm : 14.30 Tolerance mm : + 0.05 Rated speed rpm : 970 rack travel mm : 14.10 Tolerance mm : \div 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa **MEASUREMENT** Pressure hPa : 300 rack travel mm : 0.75 Tolerance mm : + 0.05

Pressure hPa Tolerance mm	: 650 : + 0.10
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 270
Check speed 1/min Check	: > 80
speed 1/min	: < 290
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	: 1000 : 700
Rated speed rpm Del. quantity	
cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance	
cm3/1000S Spreed	:
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
Aneroid pressure	
hPa Rated speed rpm	: 500
Del. cuantity cm3/1000 strokes	: 135.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s. Spreed	: +- 4.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
REDUCED QUANTITY	
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1000 : 1050
cm3/1000 strokes Tolerance	: 163.0

cm3/1000 strokes : +- 2.0

Check tolerance : +- 5.0 cm3/1000s.

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity cm3/1000 strokes : 230.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm : 350

5.00 Rack travel in mm: : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 19.0

Tolerance cm3/1000 strokes : +-3.0

Check tolerance cm3/1000s. : +- 6.0

Spreed Tolerance

cm3/1000 strokes : 6.0

Check tolerance

: 10.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.10.97 Test oil : ISO 4113

Combination No. : 0 402 648 919

Injection pump

Pump designation : PE8P12OA32OLS7843 EP type number : 0 412 628 859

Governor

Governer design. : RQV350...1050PA842

: -8

Governer no. : 0 421 813 952

Cust. part No. :

Customer—spec. information Customer : MB-NFZ Motor : OM442 LA Power KW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. $^{\circ}$ C : 40 Tolerance $^{\circ}$ C : \leftarrow 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Overflow quantity

min. L/h : 110 Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

· (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : \leftarrow 0.50

Check

tolerance $^{\circ}NW$: \leftarrow 0.75

Start of delivery mark

Tolerance : \leftarrow 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 600

	1
Rack travel in mm: 14.60 Tolerance mm: +- 0.10	Rated speed rpm : 1100 guide sleeve travel mm : 8.10
Del. quantity cm3/1000 strokes : 230.0	Tolerance mm : +- 0.30
Tolerance cm3/1000 strokes : + 1.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. : +- 4.0	control lever position degree : - 1 Rated speed rpm : 1125
Spreed	+
Tolerance cm3/1000 strokes : 5.0	+ Rack travel in mm : 17.25 + Tolerance mm : + 0.75
Check tolerance cm3/1000s. 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
	Rated speed rpm : 600 Aneroid pressure
Rated speed rpm : 350	+ hPa : 1000 + Del. quantity
	+ cm3/1000 strokes : 230.0
Rack travel in mm: 5.80 Tolerance mm: + 0.30 Del. quantity	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes : 19.0 Tolerance	cm3/1000s. : +- 4.0 + Spreed
<pre>cm3/1000 strokes : + 3.0 Check tolerance</pre>	Tolerance 5.0
cm3/1000s. : +- 6.0	+ Check tolerance
Spreed Tolerance	+ cm3/1000s. : 9.0
cm3/1000 strokes : 6.0	+
Check tolerance cm3/1000s. : 10.0	CONTROL LEVER
(B) SETTING OF INJECTION PUMP	control lever position degree : 117.0
WITH GOVERNOR	tolerance degree : + 4.0
	+ RATED SPEED
GUIDE SLEEVE TRAVEL	rack travel mm : 13.50
Rated speed rpm : 1270 guide sleeve	+ Rated speed rpm : 1095 + Tolerance 1/min : + 5
travel mm : 11.50	rack travel mm : 4.00
Tolerance mm : \leftarrow 0.50	Rated speed rpm : 1175 Tolerance 1/min : + 15
Rated speed rpm : 350	+
guide sleeve travel mm : 1.00	+ rack travel mm : 0.50 + Tolerance mm : + 0.50
Tolerance mm : + 0.20	Rated speed rpm : 1300
Rated speed rpm : 510 guide sleeve	-
travel mm : 3.85	
Tolerance mm : + 0.25	+ LOW IDLE

control lever position degree tolerance degree	: 65.0 : ← 4.0		
Setting point w/o	out bumper spring		
Rated speed rpm	: 100		
CRT mm min.	: > 7.40		
Testing:			
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.80 : + 0.30		
Rated speed rpm	: 450		
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 600 : 14.60 : + 0.10		
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 14.60 : + 0.10		
Rated speed rpm rack travel mm Tolerance mm			
ANEROID/ALTITUDE COMPENSATOR TEST			
SETTING			
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 600 : 1250 : 0.20 : ← 0.10		
2-stage LDA setting			
Rated speed rpm Pressure hPa	: 600 : 1000		
MEASUREMENT			
Rated speed rpm	: 600		
Pressure hPa rack travel mm Tolerance mm	: 400 : −3.50 : ← 0.10		
Pressure hPa	: 550		
N17			

rack travel mm Tolerance mm	: -2.20 : +- 0.10
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 270
Check speed 1/min Check	: > 80
speed 1/min	: < 290
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	: 1500
Rated speed rpm Del. quantity	: 1050
cm3/1000 strokes Tolerance	: 230.5
cm3/1000 strokes Check tolerance	: +- 1.5
cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0
Aneroid pressure	: 1500
Rated speed rpm Del. quantity	: 800
cm3/1000 strokes Tolerance	: 238.0
cm3/1000 strokes Check tolerance	: + 2.0
cm3/1000s. Spreed Tolerance	: +- 5.0
cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0
Aneroid pressure	
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 137.0
cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000s. Spreed	: +- 4.0

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity cm3/1000 strokes : 260.0

Tolerance

cm3/1000 strokes : \leftarrow 15.0

Check tolerance

cm3/1000s. : + 20.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm: 5.80

: **+** 0.30 Tolerance mm

Cel. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 14.10.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 676 833

Injection pump

Pump designation : PE6P120A320RS7426 EP type number : 0 412 626 958

Governor

Governer design. : RSV300...1100P1A650

Governer no. : 0 421 833 567

Cust. part No. : 3826502 P04 v.06/97

Customer-spec. information Customer : PENTA Motor : TWD 1031 VE

Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 300 · Tolerance l/h: + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : - 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 7.60 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1	Rack travel in mm : 0.50 Tolerance mm : +- 0.20
BASIC SETTING	+ governor spring
DADIC OCTING	+ pre-tension
Rated speed rpm : 1050	click setting x : 5.50
Rack travel in mm : 12.00	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.05	Rated speed rpm : 1050
Del. quantity cm3/1000 strokes : 292.0	Aneroid pressure hPa : 1500
Tolerance	Del. quantity + cm3/1000 strokes : 292.0
cm3/1000 strokes : + 1.0	Tolerance + cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : + 4.0	Check tolerance : +- 4.0
Spreed	Spreed Tolerance
Tolerance	cm3/1000 strokes : 7.0 Check tolerance
cm3/1000 strokes : 7.0	cm3/1000s. : 11.0
Check tolerance cm3/1000s. : 11.0	
	CONTROL LEVER
700	control lever
Rated speed rpm : 300	<pre>position degree : 62.0 tolerance degree : + 4.0</pre>
Rack travel in mm : 4.90	†
Tolerance mm : + 0.10	+ control lever
Del. quantity	+ position degree : 112.0
cm3/1000 strokes : 22.0 Tolerance	tolerance degree : +- 4.0
cm3/1000 strokes : +- 3.0	RATED SPEED
Check tolerance	rack travel mm : 11.00
cm3/1000s. : +- 6.0	Rated speed rpm : 1080
Spreed	Tolerance 1/min : + 5
Tolerance cm3/1000 strokes : 5.0	t rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1125
cm3/1000s. : 8.0	Tolerance 1/min : +- 15
	rack travel mm : 0.85
(B) SETTING OF INJECTION PUMP	+ Tolerance mm : + 0.55
WITH GOVERNOR	Rated speed rpm : 1250
	1
CUITATE OF FRUE DOCUTION	+
GUIDE SLEEVE POSITION	LOW IDLE
control lever	‡
position degree : - 3	+ control lever
Rated speed rpm : 800	position degree : 80.0
•	tolerance degree : + 4.0

control lever position degree tolerance degree	; 30.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm rack travel mm Tolerance mm	: 300 : 4.40 : +- 0.10
Testing:	
Rated speed rpm rack travel mm Tolerance mm	
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 390 : + 30
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1050 : 12.00 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.00 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.00 : + 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 7.60 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 900 : 4.00 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 200 : 0.25 : +- 0.05

FUEL DELIVERY CHAR	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1500 : 700 : 328.0 : +- 3.0 : +- 6.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 13.0 : - : 500 : 188.0 : + 1.0 : + 4.0
LOW IDLE	
Rated speed rpm	: 300
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: 4.90 : ← 0.10 : 22.0
Tolerance cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000s. Spreed	: +- 6.0
Tolerance cm3/1000 strokes Check tolerance	: 5.0
cm3/1000s.	: 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 09.10.97 : ISO 4113

Combination No. : 0 402 676 840

Injection pump

Pump designation : PE6P120A320L87918 EP type number : 0 412 626 971

Governor

Governer design. : RSV550...1050P0A685

Governer no. : 0 421 833 608

Cust. part No. : 0270744202

Customer-spec. information

Customer : MB-NFZ

Motor

: OM 441 LA

Power KW

: 239.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

tempo. °C

Tolerance °C

: + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 115 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5Tolerance bar : \leftarrow 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : \div 0.50

Firing order : _6- 3- 5- 2- 4-

Phasing : 0-60-120-180-240

: -300

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm: 14.50 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 227.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : +- 4.0	+ Check tolerance + cm3/1000S. : +- 4.0 + Spreed
Spreed	Tolerance cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes : 5.0	Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	
	CONTROL LEVER
Rated speed rpm : 550	control lever position degree : 88.0 tolerance degree : +- 4.0
Rack travel in mm: 3.90 Tolerance mm: + 0.10 Del. quantity	ASSEMBLY COVERNOR SETTING
cm3/1000 strokes : 19.0	ASSEMBLY GOVERNOR SETTING
Tolerance cm3/1000 strokes : +- 3.0	Rated speed rpm : 1070 rack travel mm : 13.50
Check tolerance cm3/1000s. : +- 6.0 Spreed	Rated speed rpm : 1122 Tolerance 1/min : +- 4
Tolerance cm3/1000 strokes : 6.0	† rack travel mm : 4.00
Check tolerance : 10.0	+ rack travel mm : 0.85 + Tolerance mm : + 0.55 + Rated speed rpm : 1300
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1071 rack travel mm : 13.50
GUIDE SLEEVE POSITION	Rated speed rpm : 1123 Tolerance 1/min : +- 4 rack travel mm : 4.00
control lever position degree : - 3 Rated speed rpm : 800	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
Rack travel in mm: 0.50 Tolerance mm: + 0.20 governor spring	Rated speed rpm : 1072 rack travel mm : 13.50
pre-tension click setting x : 1.50	Rated speed rpm : 1124 Tolerance 1/min : +- 4 rack travel mm : 4.00
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 0.85 Tolerance mm : +- 0.55
Rated speed rpm : 1030 Aneroid pressure hPa : -	Rated speed rpm : 1300
Del. quantity cm3/1000 strokes : 227.0 Tolerance	Rated speed rpm : 1073 rack travel mm : 13.50
cm3/1000 strokes : + 1.0	Rated speed rpm : 1125 Tolerance 1/min : +- 4

rack travel mm	: 4.00	+ Rated speed rpm - rack travel mm	: 960 : 14.70
rack travel mm Tolerance mm	: 0.85 : + 0.55	Tolerance mm	
Rated speed rpm		Rated speed rpm rack travel mm Tolerance mm	: 600 : 15.20 : + 0.10
Rated speed rpm rack travel mm		ļ	
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4	+ ANEROID/ALTITUDE + COMPENSATOR TEST +	
rack travel mm	: 0.85	SETTING	
Tolerance imm Rated speed rpm	: ← 0.55 : 1300	Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1000 : 15.20
rack travel mm	: 13.50	Rated speed rpm	
rack travel mm		Pressure hPa rack travel mm	: – : 10.80
rack travel mm Tolerance mm	: 0.85 : + 0.55	Tolerance mm MEASUREMENT	: ← 0.10
LOW IDLE		Rated speed rpm	: 500
		+	
control lever position degree tolerance degree		Pressure hPa rack travel mm ïolerance mm	: 13.70
	out bumper spring	Pressure hPa + rack travel mm - Tolerance mm	: 450 : 11.75 : ← 0.05
Rated speed rpm	: 450	Total dire min	0.05
CRT mm min.	: > 8.50	FUEL DELIVERY CHA	
Testing:		<u> </u>	
Rated speed rpm rack travel mm Tolerance mm	: 550 : 3.90 : ← 0.10	Aneroid pressure hPa Rated speed rpm	: - : 600
rack travel mm Rated speed rpm	: 2.00	Del. quantity cm3/1000 strokes	: 260.0
Rated speed rpm Tolerance 1/min	: 565 : + 20	Tolerance cm3/1000 strokes	
SET IDLE AUXILIA	RY SPRING	Check tolerance cm3/1000s. Spreed	
rack travel mm	: 2.00	Tolerance cm3/1000 strokes	: 8.0
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1030 : 14.50	Check tolerance cm3/1000s.	: 12.0
Tolerance mm	: +- 0.05	+ Aneroid pressure + hPa	: -

Rated speed rpm	: 500
Del. quantity cm3/1000 strokes	: 159.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed Tolerance	• T•W
cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 250.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 550 Rack travel in mm : 3.90 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000S.6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 10.10.97 Edition : 10.10.97
Test oil : ISO 4113

Combination No. : 0 402 736 884

Injection pump

Pump designation : PES6F120A720/3LS7251

: -1

EP type number : 0 412 726 926

Governor

Governer design. : RQV300...1000PA962

: -12K

Governer no. : 0 421 815 407

Cust. part No. : 3-7399

Customer-spec. information

Customer : MAN

Motor

: D2866LF09

Power KW : 309.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

1.5

Inlet press. bar :

Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 089

D22

Outside diameter : 8.0

x inside diameter :

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 15.50

Tolerance mm : \leftarrow 0.50

Firing order : 6-2-4-1-5-

: 3

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

: +- 0.75 tolerance °NW

Start of delivery mark

Tolerance : \leftarrow 0.50

Check

tolerance "NW : + 0.75

Barrel no. : 6

	Tolerance mm : +- 0.25
BASIC SETTING	Rated speed rpm : 764 guide sleeve
Rated speed rpm : 900	travel mm : 6.96
	+ Tolerance mm : +- 0.25
Rack travel in mm : 13.95	+ Rated speed rpm : 305
Tolerance mm : + 0.05	+ Rated speed rpm : 305 + guide sleeve
roterance uni	travel mm : 1.88
Del. quantity	Tolerance mm : +- 0.25
cm3/1000 strokes : 294.0	T roter direction . 1 0.23
tile/1000 3t/ 0xc3 . 2/4.0	Rated speed rpm : 355
Tolerance	guide sleeve
cm3/1000 strokes : + 1.0	travel mm : 2.53
(iib) 1000 3 (1 Okt 3	Tolerance mm : +- 0.25
Check tolerance	Total differential . 1 G.23
cm3/1000s. : +- 4.0	Rated speed rpm : 470
1.0	guide sleeve
Spreed	travel mm : 3.67
56. 664	Tolerance mm : +- 0.25
Tolerance	Total direction that
cm3/1000 strokes : 10.0	Rated speed rpm : 1260
	guide sleeve
Check tolerance	+ travel mm : 13.50
cm3/1000s. : 14.0	+ Tolerance mm : +- 0.50
	Total alike min
	
	GUIDE SLEEVE POSITION
Rated speed rpm : 300	-
mateur spread v p.m. v see	1
Rack travel in mm: 5.20	+ control lever
Tolerance mm : + 0.10	position degree : - 1
Del. quantity	Rated speed rpm : 1120
cm3/1000 strokes : 32.0	Traced operation . Tree
Tolerance	Rack travel in mm: 12.50
cm3/1000 strokes : +- 3.0	- Tolerance mm : + 2.00
Check tolerance	1 Color divide mair
cm3/1000s. : + 6.0	
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	TOLL LOAD DELIVERY AT TOLL LOAD STOP
cm3/1000 strokes : 8.0	Rated speed rpm : 900
Check tolerance	+ Aneroid pressure
cm3/1000s. : 12.0	hPa : 1300
. (2.0	Del. quantity
	- cm3/1000 strokes : 294.0
(B) SETTING OF INJECTION PUMP	Tolerance
WITH GOVERNOR	cm3/1000 strokes : +- 1.0
WETT GOVERNOON	Check tolerance
GUIDE SLEEVE TRAVEL	Spreed
THE THE PERSON OF THE PERSON O	+ Tolerance
Rated speed rpm : 1061	cm3/1000 strokes : 10.0
guide sleeve	Check tolerance
travel mm : 10.46	- cm3/1000s. : 14.0
Tolerance mm : + 0.25	1
TO COLUMN TO THE TOTAL OF THE T	1
Rated speed rpm : 300	
guide sleeve	CONTROL LEVER
travel mm : 1.88	CONTINUE ELVEN
ridacrimii · 1.00	T [*]

	1	
control lever position degree	: 300.0	ANEROID/ALTITUDE
tolerance degree		COMPENSATOR TEST
RATED SPEED rack travel mm	: 12.40	SETTING
Rated speed rpm Tolerance 1/min	: 1045 : + 5	Rated speed rpm : 900
rack travel mm	: 4.00	Pressure hPa : 1300 rack travel mm : 13.95
Rated speed rpm Tolerance 1/min		Tolerance mm : + 0.05
rack travel mm	: 0.50	Rated speed rpm : 900 Pressure hPa : -
		rack travel mm : 9.10 Tolerance mm : +- 0.10
	†	MEASUREMENT
LOW IDLE		Rated speed rpm : 960
200 1002	+	Pressure hPa : 720
control lever	1	rack travel mm : 11.90 Tolerance mm : +- 0.20
position degree		
tolerance degree	: + 4.0	Pressure hPa : 220 rack travel mm : 9.45
Setting point w/ou	ut bumper spring	Tolerance mm : + 0.05
Rated speed rpm	: 200	Start interlock
CRT mm min.	: > 6.70	Rated speed rpm :> 100
Testing:	1	Rated speed rpm : < 240
Rated speed rpm	: 300	Check
rack travel mm Tolerance mm	: 5.20 + : + 0.10 +	<pre>speed 1/min : > 80 Check</pre>
Rated speed rpm	+	speed 1/min : < 260
		FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL	+	
Rated speed rpm rack travel mm	: 900	Aneroid pressure
Tolerance mm	: + 0.05	hPa : 1300
	+	Rated speed rpm : 1000
	: 1000 : 13.50	Del. quantity cm3/1000 strokes : 269.0
Tolerance mm	: + 0.10	Tolerance
	+	cm3/1000 strokes : +- 3.0
	: 750 + : 13.40 +	Check tolerance
rack travel mm Tolerance mm	: +- 0.10	cm3/1000s. : +- 6.0
Rated speed rpm		Aneroid pressure
rack travel mm	: 6.50	hPa : 1300
Tolerance mm	: + 0.10	Rated speed rpm : 750

Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Aneroid pressure hPa 750 Rated speed rpm : Del. quantity cm3/1000 strokes : 107.0 Tolerance cm3/1000 strokes : +-5.0 Check tolerance cm3/1000s. : +- 8.0 Spreed Tolerance 10.0 cm3/1000 strokes : Check tolerance 14.0 cm3/1000s. Aneroid pressure hPa 500 Rated speed rpm : Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 4.0 STARTING FUEL DELIVERY Del. quantity cm3/1000 strokes : 210.0 Tolerance cm3/1000 strokes : + 15.0Check tolerance : +- 19.0 cm3/1000s.LOW IDLE 300 Rated speed rpm : 5.20 Rack travel in mm : : ← 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance : +- 6.0 cm3/1000s.

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 15.10.97 : ISO 4113

Combination No. : 0 402 744 804

Injection pump

Pump designation : PES4P120A320RS7402 EP type number : 0 412 724 804

Governor

Governer design. : RQV275...1200PA1257K

Governer no. : 0 421 815 494

Cust. part No. : CCEP 5154A 66-238

Customer-spec. information

Customer : RENAULT V.I. Motor : MIDR 04-02-26 A4 Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp, °C : 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity

min. L/h : 125 Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.10 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 13.00 Tolerance mm: +-0.50

Firing order : 1-3-4-2

Fhasing : 0-90-180-270 Tolerance : + 0.50

Check

tolerance *NW : +- 0.75

Start of delivery mark

*NW after s.o.d. : -0.30 Tolerance : $\leftarrow 0.50$

Check

tolerance "NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

: 21.00

and maximum rack

travel : 13.00 Difference ° CS : 2.40

	Rated speed rpm : 325
ART ZERA BARTETAN	+ guide sleeve
CRT ZERO POSITION	+ travel mm : 1.52
	Tolerance mm : +- 0.20
Rack travel in mm: 13.40	Rated speed rpm : 888
Tolerance mm : +- 0.05	† guide sleeve
	travel mm : 6.57
DAGTO OFFICE	Tolerance mm : +- 0.25
BASIC SETTING	+ Rated speed rpm : 560
Rated speed rpm : 1200	+ guide sleeve
Nated Speed I pill : 1200	travel mm : 4.01
Nal manada.	
Del. quantity	† Tolerance mm : + 0.25
cm3/1000 strokes : 261.0	
	+ Rated speed rpm : 1650
Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 13.50
	+ Tolerance mm : + 0.50
Check tolerance	
cm3/1000s. : +- 4.0	
CIID/ 10005	CHINE SHEEVE DOCUTION
Spreed	GUIDE SLEEVE POSITION
Talana	†
Tolerance 5.0	control lever
cm3/1090 strokes : 5.0	+ position degree : -1
	+ Rated speed rpm : 1473
Check tolerance	+
cm3/1000s. : 9.0	+ Rack travel in mm : 12.40
	+ Tolerance mm : + 1.30
	+
Rated speed rpm : 325	+ FULL LOAD DELIVERY AT FULL LOAD STOP
nated speed for . Jes	+
Rack travel in mm : -8.90	Rated speed rpm : 1200
Tolerance mm : + 0.10	+ Aneroid pressure
Del. quantity	+ hPa : 1200
cm3/1000 strokes : 33.0	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 261.0
cm3/1000 strokes : +- 2.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : + 1.0
cm3/1000s. : +- 6.0	+ Check tolerance
Spreed	+ cm3/1000s. : + 4.0
Spreed	
Spreed Tolerance	+ cm3/1000s. : + 4.0
Spreed Tolerance cm3/1000 strokes : 8.0	+ cm3/1000s. : + 4.0 + Spreed + Tolerance
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	<pre>cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0</pre>
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	cm3/1000S. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	<pre>cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0</pre>
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0	cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP	cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP	cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP	cm3/1000S. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR	cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR	cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL	cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 296.0
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL	cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1257	cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 296.0
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1257 guide sleeve	cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 296.0 tolerance degree : + 4.0
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1257 guide sleeve travel mm : 9.18	cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 296.0 tolerance degree : + 4.0 RATED SPEED
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1257 guide sleeve	cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 296.0 tolerance degree : + 4.0

Tolerance 1/min	: ← 5	Rated speed rpm : 1200
rack travel mm	: -9.40	+ Pressure hPa : - + rack travel mm : -3.20
Rated speed rpm	: 1405	Tolerance mm : +- 0.20
Tolerance 1/min	: ← 15	# MEASUREMENT
rack travel mm	: -12.90	+ MEASUREMENT
Tolerance mm	: + 0.50	+ Rated speed rpm : 1200
Rated speed rpm	: 1500	+ + Pressure hPa : 200
		rack travel mm : -2.40
		Tolerance mm : + 0.20
LOW IDLE		+ + Pressure hPa : 440
COM IDEE		rack travel mm : -1.10
		Tolerance mm : + 0.05
control lever position degree	• 250.0	İ
tolerance degree	: + 4.0	Start interlock
		+
Setting point w/c	out bumper spring	+ Rated speed rpm : > 130 + Rated speed rpm : < 275
Rated speed rpm	: 225	+
		+ Check
CRT mm min.	: > -7.40	+ speed 1/min :> 110 + Check
Testing:		= speed 1/min : < 285
_	70-	+ '
Rated speed rpm rack travel mm		+ FUEL DELIVERY CHARACTERISTICS
Tolerance mm		+ FOEL DELIVERY CHARACTERISTICS
	700	
Rated speed rpm	: 390	+ Aneroid pressure + hPa : 1200
		Rated speed rpm : 850
TORQUE CONTROL	4000	+ Del. quantity
Rated speed rpm	: 1200	+ cm3/1000 strokes . 249.0 + Tolerance
Rated speed rpm	: 850	cm3/1000 strokes : +- 3.0
rack travel mm	: -1.00	- Check tolerance
Tolerance mm	: +- 0.10	+ cm3/1000s. : $+$ 6.0
Rated speed rpm	: 700	Ī
rack travel mm	: -6.00	Aneroid pressure
Tolerance mm	: + 0.20	+ hPa : - + Rated speed rpm : 700
		+ kated speed rpm : 700
Rated speed rom	: 700	↓ Del. guantity
Rated speed rpm rack travel mm	: -1.80	+ Del. quantity + cm3/1000 strokes : 153.0
Rated speed rpm rack travel mm Tolerance mm	: -1.80	cm3/1000 strokes : 153.0 Tolerance
rack travel mm	: -1.80	- cm3/1000 strokes : 153.0 - Tolerance - cm3/1000 strokes : + 4.0
rack travel mm	: -1.80	cm3/1000 strokes : 153.0 Tolerance
rack travel mm Tolerance mm	: -1.80	- cm3/1000 strokes : 153.0 - Tolerance - cm3/1000 strokes : +- 4.0 - Check tolerance
rack travel mm Tolerance mm ANEROID/ALTITUDE	: -1.80	- cm3/1000 strokes : 153.0 - Tolerance - cm3/1000 strokes : +- 4.0 - Check tolerance - cm3/1000S. : +- 8.0
rack travel mm Tolerance mm ANEROID/ALTITUDE	: -1.80	- cm3/1000 strokes : 153.0 Tolerance cm3/1000 strokes : + 4.0 Check tolerance cm3/1000S. : + 8.0
rack travel mm Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING	: -1.80 : +- 0.20	- cm3/1000 strokes : 153.0 Tolerance cm3/1000 strokes : + 4.0 Check tolerance cm3/1000s. : + 8.0 Aneroid pressure hPa : - Rated speed rpm : 1200
rack travel mm Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST	: -1.80 : +- 0.20 : 1200	- cm3/1000 strokes : 153.0 - Tolerance - cm3/1000 strokes : + 4.0 - Check tolerance - cm3/1000s. : + 8.0 - Aneroid pressure - hPa : -

Tolerance cm3/1000 strokes : + 1.0 Check tolerance

cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 100.0

Tolerance

cm3/1000 strokes : \leftarrow 15.0

Check tolerance

cm3/1000s. : + 19.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm: -8.90
Tolerance mm: + 0.10

Del. quantity

cm3/1000 strckes : 33.0

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.10.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 744 808

Injection pump

Pump designation : PES4P120A320RS7402

EP type number : 0 412 724 804

Governor

Governer design. : RQV275...1200PA1257

: -1K

Governer no. : 0 421 815 553

Cust. part No. : CCEP5166 66-238

Customer-spec. information

Customer : RENAULT V.I.

: MIDR 04-02-26 A4 Motor

Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : **←** 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity

: 125 min. L/h Tolerance l/h: + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.10 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 13.00 Tolerance mm : \leftarrow 0.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

 $^{\circ}$ NW after s.o.d. : -10.30Tolerance : +- 0.50

Check

tolerance "NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

13.00 travel Difference ° CS : 2.40

CRT ZERO POSITION Rack travel in mm: 13.40 Rated speed rpm: 888 Tolerance mm: + 0.05 BASIC SETTING Rated speed rpm: 560 Rated speed rpm: 560 Rated speed rpm: 4.01 Del. quantity Cm3/1000 strokes: 261.0 Rated speed rpm: 1650 Rated speed rpm: 1650 Rated speed rpm: 1650 Rated speed rpm: 1650 Rated speed rpm: 1650 Rated speed rpm: 1650 Rated speed rpm: 1650	
Rack travel in mm: 13.40 Rated speed rpm: 888 Tolerance mm: + 0.05 BASIC SETTING Rated speed rpm: 560 Rated speed rpm: 1200 Rated speed rpm: 560 guide sleeve travel mm: 4.01 Tolerance mm: + 0.25 Rated speed rpm: 1650 Rated speed rpm: 1650 Guide sleeve Tolerance mm: 1650 Rated speed rpm: 1650 Rated speed rpm: 1650	
Rack travel in mm: 13.40 Rated speed rpm: 888 Tolerance mm: + 0.05 BASIC SETTING Rated speed rpm: 560 Rated speed rpm: 560 guide sleeve travel mm: + 0.25 Rated speed rpm: 560 guide sleeve travel mm: + 0.25 Rated speed rpm: 560 guide sleeve travel mm: + 0.25 Rated speed rpm: 1650 guide sleeve Tolerance mm: 1650 guide sleeve	
Tolerance mm : + 0.05 guide sleeve travel mm : 6.57 Tolerance mm : + 0.25 BASIC SETTING Rated speed rpm : 560 guide sleeve travel mm : 4.01 Tolerance mm : + 0.25 Rated speed rpm : 1650 Tolerance Rated speed rpm : 1650 Guide sleeve guide sleeve	
Tolerance mm : + 0.05 guide sleeve travel mm : 6.57 Tolerance mm : + 0.25 Rated speed rpm : 560 guide sleeve travel mm : 4.01 Tolerance mm : + 0.25 Rated speed rpm : 4.01 Tolerance mm : + 0.25 Rated speed rpm : 1650 Guide sleeve guide sleeve	
travel mm : 6.57 Tolerance mm : + 0.25 BASIC SETTING Rated speed rpm : 1200 Pal. quantity cm3/1000 strokes : 261.0 Rated speed rpm : 1650	
Tolerance mm : + 0.25 BASIC SETTING Rated speed rpm : 560 guide sleeve travel mm : 4.01 Tolerance mm : + 0.25 Rated speed rpm : 560 guide sleeve travel mm : 4.01 Tolerance mm : + 0.25 Cm3/1000 strokes : 261.0 Rated speed rpm : 1650 Guide sleeve	
BASIC SETTING Rated speed rpm : 1200 Rated speed rpm : 560 guide sleeve travel mm : 4.01 Tolerance mm : + 0.25 Rated speed rpm : 1650 Rated speed rpm : 1650 guide sleeve Guide sleeve	
Rated speed rpm : 1200	
Del. quantity : 4.01 Tolerance mm : 4.01 Tolerance mm : + 0.25 Rated speed rpm : 1650 Tolerance guide sleeve	
Del. quantity Tolerance mm : + 0.25 cm3/1000 strokes : 261.0 Rated speed rpm : 1650 Tolerance guide sleeve	
cm3/1000 strokes : 261.0 Rated speed rpm : 1650 Tolerance guide sleeve	
Tolerance Rated speed rpm : 1650	
Tolerance guide sleeve	
Tolerance guide sleeve	
cm3/1000 strokes : + 1.0 + travel mm : 13.50	
Tolerance mm : + 0.50	
Check tolerance	
cm3/1000s. : + 4.0	
GUIDE SLEEVE POSITION	
Spreed +	
+	
Tolerance + control lever	
cm3/1000 strokes : 5.0 + position degree : -1	
Rated speed rpm : 1473	
Check tolerance	
cm3/1000s. : 9.0 + Rack travel in mm : 12.40	
Tolerance mm : + 1.30	
Rated speed rpm : 325 FULL LOAD DELIVERY AT FULL LOAD	AD STOP
Rack travel in mm: -8.90 + Rated speed rpm : 1200	
Tolerance mm : + 0.10 + Aneroid pressure	
Del. quantity + hPa : 1200	
cm3/1000 strokes : 33.0 + Del. quantity	
Tolerance + cm3/1000 strokes : 261.0	
cm3/1000 strokes : + 2.0 + Tolerance	
Check tolerance + cm3/1000 strokes : +- 1.0	
cm3/1000S. : +- 6.0 + Check tolerance	
Spreed + cm3/1000s. : +- 4.0	
Tolerance + Spreed	
cm3/1000 strokes : 8.0 Tolerance	
Check tolerance + cm3/1000 strokes : 5.0	
cm3/1000s. : 12.0 + Check tolerance	
+ cm3/1000s. : 9.0	
<u>†</u>	
(B) SETTING OF INJECTION PUMP +	
WITH GOVERNOR	
+ CONTROL LEVER	
-	
GUIDE SLEEVE TRAVEL + control lever	
position degree : 296.0	
Pated speed rpm : 1257 + tolerance degree : +- 4.0	
Position degree : 296.0 Rated speed rpm : 1257	
Rated speed rpm : 1257	
Rated speed rpm : 1257	

Tolerance 1/min : + 5 rack travel mm -9.40Rated speed rpm : 1405 Tolerance 1/min : +- 15 rack travel mm : -12.90 : **←** 0.50 Tolerance mm Rated speed rpm : 1500 LOW IDLE control lever position degree : 251.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm 225 CRT mm min. : > -7.40 Testing: Rated speed rpm 325 rack travel mm -8.90: **←** 0.10 Tolerance mm 390 Rated speed rpm TORQUE CONTROL Rated speed rpm : 1200 Rated speed rpm 850 -1.00rack travel mm : +- 0.10 Tolerance mm 700 Rated speed rpm : -6.00 rack travel mm Tolerance mm : **←** 0.20 700 Rated speed rpm : : -1.80 rack travel mm Tolerance mm : **←** 0.20 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1200

1200

Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1200 : - : -3.20 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 1200
Pressure hPa rack travel mm Tolerance mm	: 200 : -2.40 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 440 : -1.10 : + 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 130 : < 275
Check speed 1/min Check	: > 110
speed 1/min	: < 285
Aneroid pressure hPa Rated speed rpm	: 1200
Del. quantity cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s.	: + 6.0
Aneroid pressure hPa Rated speed rpm	: - : 700
Del. quantity cm3/1000 strokes	: 153.0
Tolerance cm3/1000 strokes	: +- 4.0
Check tolerance cm3/1000s.	: +- 8.0
Aneroid pressure	: -
Rated speed rpm Del. quantity	: 1200
cm3/1000 strokes	: 183.0

Pressure hPa :

Tolerance cm3/1000 strokes : +- 1.0 Check tolerance

cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 100.0

Tolerance

cm3/1000 strokes : + 15.0

Check tolerance

cm3/1000s. : + 19.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : -8.90Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 33.0

Tolerance

cm3/1000 strokes : \leftarrow 2.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.10.97 : ISO 4113

Combination No. : 0 402 746 995

Injection pump

Pump designation : PES6P12OA32ORS7343

EP type number : 0 412 726 915

Governor

Governer design. : RQV300...1000PA1160K

Governer no. : 0 421 815 420

Cust. part No. : CCEP 5144A 66-232

Customer-spec. information

: RENAULT V.I. Customer

Motor : MIDR 062356 A/41

Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C : +- 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5

Tolerance bar : **←** 1.5

: 1 680 750 089 Test lines

8.0 Outside diameter :

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 4.50 Tolerance mm : **←** 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 11.00

Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance "NW : + 0.75

Start of delivery mark

 $^{\circ}$ NW after s.o.d. : -0.40Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

11.00 travel Difference ° CS : 2.25

CRT ZERO POSITION

Rack travel in mm Tolerance mm	: 12.80 : +- 0.05
BASIC SETTING	
Rated speed rpm	: 1000
Del. quantity cm3/1000 strokes	: 350.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: +- 4.0
Spreed	
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 9.0
Rated speed rpm	: 300
Rack travel in mm Tolerance num Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: −7.85 : + 0.10 : 36.0 : + 1.0 : + 5.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 8.0 : 12.0
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP -
GUIDE SLEEVE TRAVE	<u> </u>
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1103 : 8.70 : +- 0.25
Rated speed rpm guide sleeve travel mm	: 300 : 1.32

Tolerance mm	: +- 0.25	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 823	
	: 5.92 : +- 0.25	
Rated speed rpm guide sleeve	: 405	
travel mm Tolerance mm	: 2.43 : +- 0.25	
Rated speed rpm guide sleeve	: 455	
travel mm Tolerance mm	: 2.98 : + 0.25	
Rated speed rpm guide sleeve	: 550	
travel mm Tolerance mm	: 3.66 : +- 0.25	
Rated speed rpm guide sleeve	: 1440	
travel mm Tolerance mm	: 13.50 : +- 0.50	
GUIDE SLEEVE POSITION		

control lever position degree : -1 Rated speed rpm : 1300

Rack travel in mm : 11.60 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000 Aneroid pressure hPa 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0Check tolerance cm3/1000s.4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 9.0

CONTROL LEVER

E07

		
control lever position degree tolerance degree		ANEROID/ALTITUDE COMPENSATOR TEST
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 1100	SETTING Rated speed rpm : 1000
rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Tolerance mm Rated speed rpm	: 1210 : + 15 : -12.30 : + 0.50	Pressure hPa : 1200 Rated speed rpm : 1000 Pressure hPa : - rack travel mm : -3.90 Tolerance mm : + 0.30 MEASUREMENT
		Rated speed rpm : 1000
LOW IDLE	-	Pressure hPa : 320 rack travel mm : -2.80 Tolerance mm : + 0.15
control lever position degree tolerance degree		Pressure hPa : 520 rack travel mm : -1.70 Tolerance mm : + 0.05
Testing:		+
Rated speed rpm rack travel mm Tolerance mm		Rated speed rpm : > 100 Rated speed rpm : < 225
Rated speed rpm	•	Check speed 1/min :> 80
CRT mm max. Rated speed rpm		+ Check - speed 1/min : < 245
Mateu speed i pili	. 370	FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL Rated speed rpm		Aneroid pressure
Rated speed rpm rack travel mm Tolerance mm	: -0.45 : + 0.15	hPa : 1200 Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 381.0
Rated speed rpm rack travel mm Tolerance mm	: 0.10 : + 0.15	Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0
Rated speed rpm rack travel mm Tolerance mm	: 350 : -1.70 : + 0.30	Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 245.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75

Del. quantity

cm3/1000 strokes : 185.0

Tolerance

cm3/1000 strokes : +- 15.0

cm3/1000 street Check tolerance : + 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm: -7.85 Tolerance mm : \leftarrow 0.10

Del. quantity

cm3/1000 strokes : 36.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.: ← 5.0

Spreed

Tolerance

cm3/1000 service Check tolerance 12.0 cm3/1000 strokes : 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 15,10,97 Test oil : ISO 4113

Combination No. : 0 402 946 011

Injection pump

Pump designation : PES6P120A320RS8028 EP type number : 0 412 926 021

Governor

Governer design. : RQV275...1250PA1125K

Governer no. : 0 421 815 981

Cust. part No. : CCEP 5140A 66-205

Customer-spec. information

Customer : RENAULT V.I. : MIDR 06.02.26L51 Motor

Power KW

: 132.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

PEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

: 5.00 : ← 0.05 Prestroke mm Tolerance mm

Check

tolerance mm : ← 0.10

Rack travel in mm : 17.00 Tolerance mm : \leftarrow 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: **←** 0.50 Tolerance

Check

tolerance "NW : $\leftarrow 0.75$

Start of delivery mark

*NW after s.o.d. : -0.25 : +- 0.50 Tolerance

Check

tolerance °NW : ← 0.75

: 1 Barrel no.

Beginning of delivery differende

betw. rack trav.

21.00 mm

and maximum rack

travel : 10.00 Difference ° CS : 2.25

CRT ZERO POSITION

		† Tolerand
Rack travel in mn	. 12 60	+ Rated sp
Tolerance mm		+ guide sl
		+ travel m
	·	— + Tolerand
BASIC SETTING		+ Rated sp
Rated speed rpm	: 1250	guide sl
		+ travel m
Del. quantity		+ Tolerand
cm3/1000 strokes	: 170.0	+
Tolerance		- Rated sp
cm3/1000 strokes	: +- 1.0	+ guide sl + travel m
CIRCY TOOU SET ONES	. 1.0	Tolerand
Check tolerance		
cm3/1000s.	: + 4.0	Rated sp
		+ guide sl
Spreed		+ travel m
Ta.1		† Tolerand
Tolerance cm3/1000 strokes	. 50	† Botod on
CIID/ 1000 Strokes	: 5.0	+ Rated sp + guide sl
Check tolerance		travel m
cm3/1000s.	: 9.0	Tolerand
		+
	The F	+ GUIDE SL
Rated speed rpm	: 325	†
Rack travel in mm	n: -6.60	control
Tolerance mm	· · + 0.10	position
Del. quantity		+ Rated sp
cm3/1000 strokes	: 41.0	+
Tolerance		+ Rack tra
cm3/1000 strokes	: + 2.0	+ Tolerand
Check tolerance		†
cm3/1000s.	: +- 6.0	EIII 1 00
Spreed Tolerance		† FULL LOA
cm3/1000 strokes	: 8.0	Rated sp
Check tolerance		Aneroid
cm3/1000s.	: 12.0	+ hPa
		+ Del. qua
45.5		+ cm3/1000
(B) SETTING OF IN	JECTION PUMP	Tolerand
WITH GOVERNOR		+ cm3/1000 + Check to
		— F cm3/1000
GUIDE SLEEVE TRAV	/FI	Spreed
		Tolerand
Rated speed rpm	: 1355	+ cm3/1000
guide sleeve	40.40	+ Check to
travel mm	: 10.10	+ cm3/1000
Tolerance mm	: + 0.10	†
Pated chard man	: 275	İ
Rated speed rpm guide sleeve	. 213	CONTROL
travel mm	: 1.00	CONTROL
J. GTOC IMM		ı

Tolerance mm	: +- 0.15	
Rated speed rpm guide sleeve	: 929	
travel mm Tolerance mm	: 6.80 : +- 0.20	
Rated speed rpm guide sleeve	: 390	
travel mm Tolerance mm	: 2.39 : + 0.20	
Rated speed rpm guide sleeve	: 440	
travel mm Tolerance mm	: 3.01 : + 0.20	
Rated speed rpm guide sleeve	: 550	
travel mm Tolerance mm	: 3.92 : +- 0.20	
Rated speed rpm guide sleeve	: 1650	
travel mm Tolerance mm	: 13.50 : + 0.50	
GUIDE SLEEVE POSITION		
control lever position degree Rated speed rpm	: - 1 : 1430	
Rack travel in mm Tolerance mm	: 10.90 : + 2.00	
FULL LOAD DELIVER	Y AT FULL LOAD STOP	
Rated speed rpm Aneroid pressure	: 1250	
hPa Del. quantity	: 1600	
cm3/1000 strokes Tolerance	: 170.0	
cm3/1000 strokes	: +- 1.0	

strokes : + 1.0 lerance S. : + 4.0 strokes: 5.0 lerance 9.0

LEVER

control lever position degree tolerance degree RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Rated speed rpm Tolerance 1/min rack travel mm	: ← 4.0 : −1.00 : 1330 : ← 15 : −8.60 : 1470 : ← 5	Pressure hPa Tolerance mm Rated speed rpm Pressure hPa rack travel mm Tolerance mm MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: -4.30 : + 0.20 : 1250 : 200 : -3.70
Tolerance mm Rated speed rpm		Pressure hPa rack travel mm Tolerance mm	
LOW IDLE		Start interlock	
control lever position degree tolerance degree		Rated speed rpm Rated speed rpm Check speed 1/min	: < 240
Testing:		Check speed 1/min	
Rated speed rpm rack travel mm Tolerance mm	: -6.60	FUEL DELIVERY CHA	
Rated speed rpm	: 200		
CRT mm max.	: < -5.20	+ Aneroid pressure + hPa + Rated speed rpm	: 1600 : 650
Rated speed rpm	: 360	+ Del. quantity + cm3/1000 strokes + Tolerance	
TORQUE CONTROL Rated speed rpm		cm3/1000 strokes Check tolerance cm3/1000s.	
Rated speed rpm rack travel mm Tolerance mm	: -1.10	Aneroid pressure	
Rated speed rpm rack travel mm		<pre>+ hPa + Rated speed rpm + Del. quantity</pre>	: – : 500
Tolerance mm		+ cm3/1000 strokes	: 116.0
Total difection	: +- 0.25	+ Tolerance	
ANEROID/ALTITUDE COMPENSATOR TEST	: +- 0.25		: + 1.0
ANEROID/ALTITUDE	: +- 0.25	Tolerance cm3/1000 strokes Check tolerance	: +- 1.0 : +- 4.0

Rated speed rpm : 100

Del. quantity cm3/1000 strokes : 125.0

Tolerance

cm3/1000 strokes : \leftarrow 10.0

Check tolerance

cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm: -6.60 Tolerance nm: + 0.10 Del. quantity

cm3/1000 strokes : 41.0

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 28.05.90 : ISO 4113

Combination No. : 0 403 436 103

Injection pump

Pump designation : PES6MW100/120RS1143

EP type number : 0 413 406 137

Governor

Governer design. : RQV350...1100MW82

Governer no. : 0 420 083 130

Cust. part No. :

Customer-spec. information

Customer : CUMMINS/US

Motor

: 6 CTA-830

Power KW

: 186.0

TEST BENCH REQUIREMENTS

Inlet line

: 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 017

Opening pressure

: 208.5

Tolerance bar : ← 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar: 31.0

Tolerance bar : +- 1.0

Prestroke mm : 3.10
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance 'NW : +- 0.75

Start of delivery blocking

Tolerance : ← 8.00

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.75

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 151.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance	
cm3/1000s.	: +- 3.0
Spreed	
Tolerance	
cm3/1000 strokes	: 3.5
Check tolerance	
cm3/1000s.	: 6.0
Rated speed rpm	: 350
Rack travel in mm	: 7.25
Tolerance mm	: +- 0.05
Del. quantity	
cm3/1000 strokes	: 18.0
Tolerance	
cm3/1000 strokes	: +- 2.0
Check tolerance	
cm3/1000s.	: + 4.0
Spreed	
•	
Tolerance	• 35
Tolerance cm3/1000 strokes	: 3.5
Tolerance cm3/1000 strokes check tolerance cm3/1000S.	: 5.5
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. (B) SETTING OF IN	: 5.5
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. (B) SETTING OF INVITED GOVERNOR GUIDE SLEEVE TRAVI	: 5.5 JECTION PUMP
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF INVITH GOVERNOR GUIDE SLEEVE TRAVI	: 5.5 JECTION PUMP
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. (B) SETTING OF INVITED GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve	: 5.5 JECTION PUMP EL : 350
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. (B) SETTING OF INVITH GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve travel mm	: 5.5 JECTION PUMP EL : 350 : 1.40
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. (B) SETTING OF INVITED GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve travel mm	: 5.5 JECTION PUMP EL : 350
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF INVITH GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve travel mm Colerance mm Rated speed rpm	: 5.5 JECTION PUMP EL : 350 : 1.40
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF INA WITH GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve travel mm Rated speed rpm guide sleeve	: 5.5 JECTION PUMP EL : 350 : 1.40 : → 0.20 : 1240
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF INDITH GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve travel mm Rated speed rpm guide sleeve cravel mm	: 5.5 JECTION PUMP EL : 350 : 1.40 : + 0.20 : 1240 : 9.00
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF INDITH GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve travel mm Rated speed rpm guide sleeve travel mm guide sleeve travel mm	: 5.5 JECTION PUMP EL : 350 : 1.40 : → 0.20 : 1240
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF INDITH GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve travel mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm Guide sleeve travel mm Tolerance mm	: 5.5 JECTION PUMP EL : 350 : 1.40 : + 0.20 : 1240 : 9.00
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF INVITH GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 5.5 JECTION PUMP EL : 350 : 1.40 : + 0.20 : 1240 : 9.00 : + 0.20 : 1140
Tolerance cm3/1000 strokes check tolerance cm3/1000s. (B) SETTING OF INVITH GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve cravel mm Tolerance mm Rated speed rpm guide sleeve cravel mm Tolerance mm Rated speed rpm guide sleeve cravel mm Tolerance mm	: 5.5 JECTION PUMP EL : 350 : 1.40 : + 0.20 : 1240 : 9.00 : + 0.20 : 1140 : 7.90
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF INVITH GOVERNOR GUIDE SLEEVE TRAVI	: 5.5 JECTION PUMP EL : 350 : 1.40 : + 0.20 : 1240 : 9.00 : + 0.20 : 1140
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF INA WITH GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 5.5 JECTION PUMP EL : 350 : 1.40 : + 0.20 : 1240 : 9.00 : + 0.20 : 1140 : 7.90
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF IN. WITH GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 5.5 JECTION PUMP EL : 350 : 1.40 : → 0.20 : 1240 : 9.00 : → 0.20 : 1140 : 7.90 : → 0.10 : 700
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF INAMITH GOVERNOR GUIDE SLEEVE TRAVI Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 5.5 JECTION PUMP EL : 350 : 1.40 : → 0.20 : 1240 : 9.00 : ← 0.20 : 1140 : 7.90 : ← 0.10

Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1100 : 900 : 151.0 : + 1.0 : + 3.0 : 3.5 : 6.0
control lever position degree tolerance degree RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Rated speed rpm Tolerance 1/min	: 48.0 : +- 4.0 : 11.70 : 1155 : +- 5 : 4.00 : 1255 : +- 15 : 0.50 : +- 0.50 : 1330
LOW IDLE control lever position degree tolerance degree	: 17.0 : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 9.00

Testing:

Rated speed rpm : 350 rack travel mm : 7.25 Tolerance mm : + 0.05

Rated speed rpm : 430

		+ Aneroid pressure
TORQUE CONTROL Rated speed rpm	: 1100	hPa : 900 Rated speed rpm : 700 Del. quantity
rack travel mm Tolerance mm	: 12.75	cm3/1000 strokes : 160.0 Tolerance
Rated speed rpm		cm3/1000 strokes : +- 1.0 Check tolerance
rack travel mm Tolerance mm	: 13.65	cm3/1000s. : +- 3.0 + Spreed
Rated speed rpm rack travel mm		Tolerance cm3/1000 strokes : 5.0 Check tolerance
Tolerance mm		cm3/1000s. : 7.0
ANEROID/ALTITUDE COMPENSATOR TEST		Aneroid pressure hPa : - Rated speed rpm : 500
SETTING		Del. quantity cm3/1000 strokes : 89.0 Tolerance
Rated speed rpm Pressure hPa	: 500 : -	+ cm3/1000 strokes : +- 1.0 + Check tolerance
rack travel mm Tolerance mm	: 10.00	cm3/1000s. : +- 3.0
Rated speed rpm Pressure hPa rack travel mm	: 300 : 10.85	STARTING FUEL DELIVERY
Tolerance mm MEASUREMENT	: + 0.05	Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : +- 1.00
Rated speed rpm	: 500	+ Del. quantity + cm3/1000 strokes : 215.0
Pressure hPa		Tolerance cm3/1000 strokes : + 10.0 check tolerance
Tolerance mm		+ cm3/1000s. : + 13.0
Pressure hPa rack travel mm Tolerance mm	: 520 : 12.35 : + 0.15	
		LOW IDLE
Start interlock		Rated speed rpm : 350
Rated speed rpm Rated speed rpm		Rack travel in mm : 7.25 Tolerance mm : + 0.05 Del. quantity
Check speed 1/min	: > 80	- cm3/1000 strokes : 18.0 - Tolerance
Check speed 1/min	: < 240	cm3/1000 strokes : +- 2.0 Check tolerance
		cm3/1000s. : +- 4.0 Spreed
FUEL DELIVERY CHA	ARACTERISTICS	Tolerance cm3/1000 strokes : 3.5
		+ Check tolerance + cm3/1000s. : 5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 09.11.92

Test oil

: ISO 4113

Combination No. : 0 403 436 105

Injection pump

Pump designation : PES6MW100/120RS1169

EP type number : 0 413 406 153

Governor

Governer design. : RQV350...1200MW78-1

Governer no. : 0 420 083 156

Cust. part No. :

Customer-spec. information Customer : CDC

Motor Power KW : 6CTA830 : 197.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 017

Opening pressure

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : +- 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : \leftarrow 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance 'NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.95

Tolerance mm : \leftarrow 0.05

Del. quantity

cm3/1000 strokes : 142.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Spreed

Tolerance cm3/1000 strokes : 3.5	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : 6.0	cm3/1000s. : +- 3.0 + Spreed + Tolerance
	cm3/1000 strokes : 3.5 Check tolerance
Rated speed rpm : 350	cm3/1000s. : 6.0
Rack travel in mm : 5.70 Tolerance mm : + 0.10	
Del. quantity cm3/1000 strokes : 18.0	CONTROL LEVER
Tolerance cm3/1000 strokes : +- 2.0 Check tolerance	tolerance degree : + 4.0
cm3/1000s. : +- 4.0 Spreed	RATED SPEED
Tolerance cm3/1000 strokes : 3.5 Check tolerance	rack travel mm : 10.90 + Rated speed rpm : 1245 + Tolerance 1/min : +- 5
cm3/1000S. : 5.5 (B) SETTING OF INJECTION PUMP	rack travel mm : 4.00 Rated speed rpm : 1400 Tolerance 1/min : + 15
WITH GOVERNOR	rack travel mm : 0.50 Tolerance mm : + 0.50
GUIDE SLEEVE TRAVEL	+ Rated speed rpm : 1500
Rated speed rom : 350 guide sleeve	+
travel mm : 1.40 Tolerance mm : + 0.20	LOW IDLE
Rated speed rpm : 1350 guide sleeve	+ control lever
travel mm : 8.80 Tolerance mm : + 0.20	position degree : 66.0 tolerance degree : + 4.0
Rated speed rpm : 1250 guide sleeve	Setting point w/out bumper spring
travel mm : 7.70 Tolerance mm : + 0.10	Rated speed rpm : 100
Rated speed rpm : 800	+ CRT mm min. : > 7.50
guide sleeve travel mm : 5.20	+ Testing:
Tolerance mm : + 0.30	+ Rated speed rpm : 350 + rack travel mm : 5.70 + Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Rated speed rpm : 435
Rated speed rpm : 1200 Aneroid pressure	
hPa : 600 Del. quantity	TORQUE CONTROL Rated speed rpm : 1200
cm3/1000 strokes : 142.0	rack travel mm : 11.95 + Tolerance mm : +- 0.05

Rated speed rpm rack travel mm Tolerance mm		† †	Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. :	
ANEROID/ALTITUDE COMPENSATOR TEST		†	Aneroid pressure hPa : Rated speed rpm :	- 500
SETTING		Ī	Del. quantity cm3/1000 strokes : Tolerance	102.0
Rated speed rpm Pressure hPa rack travel mm Toierance mm	: 500 : 600 : 11.95 : + 0.05	Ţ +	cm3/1000 strokes : Check tolerance cm3/1000s. : Spreed	+ 1.0 + 3.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 10.10 : + 0.10	† † † †	Tolerance cm3/1000 strokes : Check tolerance cm3/1000S. :	3.5
MEASUREMENT	****	‡	STARTING FUEL DELIV	/ERY
Rated speed rpm Pressure hPa rack travel mm Tolerance mm Pressure hPa	: 500 : 500 : 11.75 : ← 0.15 : 345	† † †	Rated speed rpm : rack travel mm : Tolerance mm Del. quantity cm3/1000 strokes : Tolerance	20.00 +- 1.00
rack travel mm Tolerance mm	: 10.45 : + 0.05	 	cm3/1000 strokes : Check tolerance	+ 5.0 + 8.0
Start interlock	: > 100	‡		
Rated speed rpm Rated speed rpm		Ī	LOW IDLE	
Check speed 1/min	: > 80	+	Rated speed rpm :	
Check speed 1/min	: < 240	‡	Rack travel in mm : Tolerance mm : Del. quantity	
FUEL DELIVERY CHA	RACTERISTICS		cm3/1000 strokes : Tolerance	
		‡	Check tolerance	+- 2.0
Aneroid pressure hPa Rated speed rpm	: 600 : 750	‡	cm3/1000s. : Spreed Tolerance	+- 4.0
Del. quantity cm3/1000 strokes		‡	cm3/1000 strokes : Check tolerance	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: + 2.0 : + 4.0	† † †	cm3/1000s. :	5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 07.05.90 : ISO 4113

Combination No. : 0 403 436 106

Injection pump

Pump designation : FES6MW100/120RS1143

EP type number : 0 413 406 137

Governor

Governer design. : RQV350...1100MW78-2

Governer no. : 0 420 083 160

Cust. part No. : 3915907

Customer-spec. information

Customer : CUMMINS/US

Motor

: 6 CTA-8.3

Power KW

: 179.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 017

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter:

2.0

x length mm : 600

(A) INJECTION PUMP SETTING VALUES

REMARKS

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

Prestroke mm : 3.10 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

-300

Tolerance

: +- 0.50

Check

tolerance °NW

: + 0.75

Start of delivery blocking

Tolerance

: +- 8.00

Barrel no.

: 1

BASIC SETTING

Del. quantity

cm3/1000 strokes : 151.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s.	: 6.0	- Spreed - Tolerance
		- cm3/1000 strokes : 3.5 - Check tolerance
Rated speed rpm	: 350	- c m 3/1000s. : 6.0
Rack travel in m Tolerance mm		- CONTROL LEVER
Del. quantity cm3/1000 strokes	: 18.0	- control lever
Tolerance cm3/1000 strokes Check tolerance	: + 2.0	- position degree : 100.0 - tolerance degree : +- 4.0
cm3/1000s. Spreed	: +- 4.5	- RATED SPEED - rack travel mm : 11.70
Tolerance cm3/1000 strokes	: 3.5	- Rated speed rpm : 1145 - Tolerance 1/min : +- 5
Check tolerance cm3/1000S.	: 5.5	- rack travel mm : 4.00 - Rated speed rpm : 1245 - Tolerance 1/min : +- 15
(B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1330
GUIDE SLEEVE TRAN	/EL	-
Rated speed rpm guide sleeve	+	
travel mm Tolerance mm	: 8.00 : + J.10	- LOW IDLE -
Rated speed rpm guide sleeve	+	- control lever - position degree : 69.0
travel mm Tolerance mm	: 1.40 : ← 0.20	- tolerance degree : +- 4.0 - - Setting point w/out bumper spring
Rated speed rpm guide sleeve	: 550	- Rated speed rpm : 100
travel mm Tolerance mm	: 3.30 : + 0.30	- CRT mm min. :> 9.00
Rated speed rpm guide sleeve	: 1210	- - Testing: -
travel mm Tolerance mm	: 9.20 : + 0.20	- Rated speed rpm : 350 - rack travel mm : 7.40 - Tolerance mm : +- 0.10
FULL LOAD DELIVER	RY AT FULL LOAD STOP	- Rated speed rpm : 455
Rated speed rpm Aneroid pressure	+	
hPa Del. quantity	: 900	- ANEROID/ALTITUDE - COMPENSATOR TEST
cm3/1000 strokes Tolerance cm3/1000 strokes	+	- - - SETTING
Check tolerance cm3/1000s.	: + 3.0	- Rated speed rpm : 500

Pressure hPa	: 900
rack travel mm	: 12.75
Tolerance mm	: +- 0.05
Rated speed rpm	: 500
Pressure hPa	: -
rack travel mm	: 9.65
Tolerance mm	: ← 0.05
MEASUREMENT	
Rated speed ಗಾಣ್ಯ	: 500
Pressure hPa	: 520
rack travel mm	: 520 : 12.05 : + 0.15
Tolerance ma	: + 0.15
. Otto allee ills	. • 0.17
Pressure hPa	: 300
rack travel mm	: 10.85
Tolerance mm	: +- 0.05
Start interlock	
	100
Rated speed rpm Rated speed rpm	: > 100
Rated speed rpm	: < 220
Check	
speed 1/min	: > 80
Check	. , 50
speed 1/min	: < 240
FUEL DELIVERY CHA	
·	
Aneroid pressure	
hPa	: -
Rated speed rpm	: 500
Del. quantity	. 77 6
cm3/1000 strokes	: 77.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance	, 7 (,U
cm3/1000s.	: +- 3.0
STARTING FUEL DEL	IVERY
Pated coad	: 100
Rated speed rpm rack travel mm	: 20.00
Tolerance mm	: 20.00 : +- 1.00
Del. quantity	• F= 1.00
cm3/1000 strokes	: 215.0
	. 213.0
Tolerance cm3/1000 strokes	

LOW IDLE	
Rated speed rpm	: 350
Rack travel in mm Tolerance mm Del. quantity	: 7.40 : +- 0.10
cm3/1000 strokes Tolerance	: 18.0
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s. Spreed Tolerance	: +- 4.5
cm3/1000 strokes Check tolerance	: 3.5
cm3/1000s.	: 5.5

End of test specification sheet

Check tolerance cm3/1000s. : +- 13.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15,10,97 : ISO 4113 Test oil

Combination No. : 0 403 444 155

Injection pump

Pump designation : PES4NW100/720RS1235 EP type number : 0 413 404 121

Governor

Governer design. : RQV300...1300MW139 Governer no. : 0 420 083 304

Cust. part No. : 0260748502

Customer-spec. information Customer : MB-NFZ Motor : 0M364A Power KW : 79.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm 3.70 : + 0.05 Tolerance mm

Check

: ← 0.10 tolerance mm

Rack travel in mm: 20.00 Tolerance mm : + 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270 Tolerance Check : **←** 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.90 Tolerance mm : \leftarrow 0.05

Del. quantity

cm3/1000 strokes : 88.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

	1 0 1 1 1 1 1 1 1 1 1 1 1
Check tolerance	Rated speed rpm : 1430
cm3/1000s. : 6.0	Rack travel in mm: 10.0 Tolerance mm: + 2.7
Date de anne de maren de 200	500 1000 NELTUEDY AT 500 1
Rated speed rpm : 300	FULL LOAD DELIVERY AT FULL
Rack travel in mm: 7.80 Tolerance mm: + 0.10	Rated speed rpm : 1300 Aneroid pressure
Del. quantity	+ hPa : 700
cm3/1000 strokes : 12.0 Tolerance	Del. quantity cm3/1000 strokes : 88.
cm3/1000 strokes : +- 2.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : +- 1.
cm3/1000s. : +- 4.5 Spreed	<pre></pre>
Tolerance	Spreed
cm3/1000 strokes : 3.5	Tolerance
Check tolerance cm3/1000s. : 5.5	cm3/1000 strokes : 3. Check tolerance
Chis/ 10003. : 3.3	- cm3/1000s. : 6.
(B) SETTING OF INJECTION PUMP	†
WITH GOVERNOR	
	CONTROL LEVER
GUIDE SLEEVE TRAVEL	- t control lever
	position degree : 113.
Rated speed rpm : 1355 guide sleeve	tolerance degree : + 4.
travel nm : 10.30	RATED SPEED
Tolerance mm : +- 0.15	rack travel mm : 11.9
Rated speed rpm : 300	+ Rated speed rpm : 1345 + Tolerance 1/min : +-
guide steeve	Tocerance minimum.
travel mm : 1.25	+ rack travel mm : 4.0
Tolerance mm : + 0.20	Rated speed rpm : 1460
Rated speed rpm : 894	† Tolerance 1/min : + 1
guide sleeve	rack travel mm : 0.5
travel mm : 6.20	+ Tolerance mm : + 0.5
Tolerance mm : ← 0.25	Rated speed rpm : 1550
Rated speed rpm : 510	I
guide sleeve	+
travel mm : 3.55	1
Tolerance mm : ← 0.25	+ LOW IDLE
Rated speed rpm : 1600	+
guide sleeve	+ control lever
travel mm : 13.50	position degree : 76.
Tolerance mm : + 0.50	tolerance degree : + 4.
OUTDE OF SECTION	- Setting point w/out bumper
GUIDE SLEEVE POSITION	+ Rated speed rpm : 200
	+ Nated Speed Phill : 200
control lever	← CRT mm min. :> 9.5
position degree : 117	+

ravel in mm : 10.00 nce mm : +- 2.70 OAD DELIVERY AT FULL LOAD STOP speed rpm : 1300 d pressure : 700 uantity 000 strokes : 88.0 nce 100 strokes : +- 1.0 tolerance : + 3.0 00s. nce 100 strokes : 3.5 tolerance 6.0 L LEVER l lever on degree : 113.0 nce degree : + 4.0 SPEED travel mm : 11.90 speed rpm : 1345 ance 1/min : + 5 ravel mm : 4.00 speed rpm : 1460 nce $1/\min$: \leftarrow 15 cravel mm : 0.50 ance mm : $\leftarrow 0.50$ speed rpm : 1550 LE l Lever on degree : 76.0 nce degree : + 4.0 g point w/out bumper spring speed rpm : 200 min. :> 9.50

Testing:

Rated speed rpm	:	300
rack travel mm	:	7.80
Tolerance mm	: +-	0.10

TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1300 : 12.90 : + 0.05
Rated speed rpm	: 600
rack travel mm	: 13.40
Tolerance mm	: + 0.10
Rated speed rpm	: 1150
rack travel mm	: 13.10
Tolerance mm	: + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

:	500
:	700
:	12.90
: +	- 0.10
	:

Rated speed rpm	:	500
Pressure hPa	:	-
Tolerance mm	: +	-0.0

MEASUREMENT

Rated	speed	rpm	:	500

Pressure hPa	:	230
rack travel mm	:	0.90
Tolerance mm	: +	- 0.10

Pressure hPa	:	150
rack travel mm	:	0.40
Tolerance mm	: +	- 0.10

Start interlock

Rated	speed	rpm	:	>	100
Rated	speed	rpm	:	<	200

Check

speed	1/min	: >	80
Al I .			

Check

speed 1/min : < 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	700
Rated speed rpm	:	600
Del. quantity		
cm3/1000 strokes	:	78.0
Tolerance		
cm3/1000 strokes	: -	⊢ 1.5
Check tolerance		
cm3/1000s.	: -	⊢ 4.0
Spreed		
Tolerance		
cm3/1000 strokes	:	5.0
Check tolerance		7.0
cm3/1000s.	:	7.0

_	merora pressure			
H	nPa	:		-
F	Rated speed rpm	:		500
D	el quantity			
C	m3/1000 strokes	:		48.0
T	olerance			
C	m3/1000 strokes	:	+-	1.0
(Check tolerance			
C	m3/1000s.	:	+	3.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity cm3/1000 strokes	:	90.0
Tolerance cm3/1000 strokes	: +-	- 5.0
Check tolerance cm3/1000s.	: +-	- 8.0

LOW IDLE

Rated speed rpm	:		300
Rack travel in mm Tolerance mm Del. quantity	:	+-	7.80 0.10
cm3/1000 strokes Tolerance	:		12.0
cm3/1000 strokes	:	+-	2.0
Check tolerance cm3/1000s.	:	+-	4.5

Tolerance : 3.5 Check tolerance cm3/1000s. : 5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.10.97 Test oil : ISO 4113

Combination No. : 0 402 066 714

Injection pump

Pump designation : PES6P110A120RS3336

: -1

EP type number : 0 412 016 751

Governor

Governer design. : RSV440...900P2A687

Governer no. : 0 421 833 609

Cust. part No. : 3933640

Customer—spec. information Customer : CDC Motor : 6CTA Power KW : 194.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

 $^{\circ}$ NW after s.o.d. : 8.00 Tolerance : \leftarrow 0.50

Check

tolerance *NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 15.00 Difference * CS : 1.50

BASIC SETTING	
Rated speed rpm	: 900
Rack travel in mm Tolerance mm	: 14.75 : + 0.05
Del. quantity cm3/1000 strokes	: 201.5
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: +- 3.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
Rated speed rpm	: 440
Rack travel in mm Tolerance mm Del. quantity	: 5.10 : + 0.10
cm3/1000 strokes Tolerance	: 26.5
cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000S. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000s.	: 6.5
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP
GUIDE SLEEVE POSIT	TION

pre-tension click setting x: 3.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure : 1500 hPa Del. quantity cm3/1000 strokes : 201.5 Tolerance cm3/1000 strokes : +- 1.0Check tolerance cm3/1000s. : +- 3.0 Spreed Tolerance 8.0 cm3/1000 strokes : Check tolerance cm3/1000s. : 12.0 CONTROL LEVER control lever position degree : 88.0 tolerance degree : + 6.0 RATED SPEED rack travel mm : 13.75
Rated speed rpm : 1010
Tolerance 1/min : + 5 rack travel mm : 4.00 Rated speed rpm : 1075 Tolerance 1/min : +- 5 rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1130 rack travel mm : 4.00 Rated speed rpm : 1090 Tolerance 1/min : +- 15 LOW IDLE control lever position degree : 71.0 tolerance degree : + 6.0

Control lever difference

Grad

: 17.0

governor spring

Rack travel in mm : 0.50

Tolerance mm : \leftarrow 0.20

tolerance degree : +- 6.0 Setting point w/out bumper spring 440 Rated speed rpm : 4.60 rack travel mm Rated speed rpm 100 CRT mm min. : > 19.00 Testing: 440 Rated speed rpm 5.10 rack travel mm : + 0.10Tolerance mm TORQUE CONTROL Rated speed rpm : 900 14.75 rack travel mm Tolerance mm : + 0.05ANEROID/ALTITUDE COMPENSATOR TEST SETTING 900 Rated speed rpm Pressure hPa 1500 Rated speed rpm : 900 Pressure hPa 11.10 rack travel mm Tolerance mm : + - 0.20**MEASUREMENT** Rated speed rpm 900 995 Pressure hPa 13.45 rack travel mm : + 0.20Tolerance mm 655 Pressure hPa 12.05 rack travel mm Tolerance mm : + 0.20FUEL DELIVERY CHARACTERISTICS Aneroid pressure

Tolerance cm3/1000 strokes : +- 1.0Check tolerance 3.0 cm3/1000s. STARTING FUEL DELIVERY Rated speed rpm : 100 21.00 rack travel mm : : +- 0.50 Tolerance mm Del. quantity cm3/1000 strokes : 154.0 Tolerance cm3/1000 strokes : +- 20.0Check tolerance cm3/1000s.: +- 25.0 LOW IDLE Rated speed rpm : 440 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 26.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s.4.5 Spreed Tolerance 4.0 cm3/1000 strokes : Check tolerance cm3/1000s. 6.5

End of test specification sheet

hPa : Rated speed rpm : 900

Del. quantity

cm3/1000 strokes : 123.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 25.07.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 796 813

Injection pump

Pump designation : PES6P120A720RS7356

EP type number : 0 412 726 919

Governor

Governer design. : RE30

Governer no. : 0 421 890 017

Cust. part No. : RE 61658

Customer-spec. information Customer : DEERE

: 6081 HF001 : 205.0 Motor Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

Pumo-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

: 3.60 : + 0.05 Prestroke mm Tolerance mm Check

: + 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 9.75 : **←** 0.50 Tolerance Check

tolerance °NW : **←** 0.75

Barrel no. : 1

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1:

Setting point (P, R and H pump)

3.100 Uact V 13.00 CRT mm : +/- 0.05 Tolerance mm

Check

: +/- 0.10 tolerance mm

Check value (P, R and H pump)

1,700 Uact V CRT mm 6.15 Tolerance mm : +/- 0.25 Check

: +/- 0.30 tolerance mm

Setting point (amuq M)

3,100 Uact V : 12.50 CRT mm : +/- 0.05 Tolerance mm Check

Check value (amua M)

tolerance mm

Uact V 1.700 CRT mm 5.50 : +/- 0.25 Tolerance mm

Check

: +/- 0.30tolerance mm

Stop position (P, R and H pump)

: Value with Uact V

> deenergised adjusting magnet and control rod in

: +/- 0.10

stop position.

0.75 CRT mm : +/- 0.25 Tolerance mm

Check

tolerance mm : +/- 0.35

Stop position (M pump)

Uact V 0,720 : **←** 0,065 Tolerance Volt CRT mm 1,00

Starting position

(M pump)

Uact V 4,500 Tolerance Volt : + 0.115: 19,00 CRT mm Tolerance mm : + 0,80

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps)

Test with control rod in stop position

Engine speed min-1: 60 Amplitude V 1.4 Tolerance V : +/- 0.6

Check

tolerance V : +/- 1.20

Engine speed min-1: 600

Difference Amplitude to

Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050 Uact V 3.030 Del. quantity

cm3/1000 strokes : 213.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 4.0

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 9.0

FUEL DELIVERY CHARACTERISTICS

700 Rated speed rpm Uact V 3.120

Del. quantity

cm3/1000 strokes : 237.0

Tolerance cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000s. Spreed	: +- 6.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
TEST POINT L1	
Rated speed rpm	: 450 : 1.740
Tolerance Volt Check tolerance	· + 0.060
Volt Del. quantity	: ← 0.060
cm3/1000 strokes	: 26.0
cm3/1000 strokes Spreed	: +- 3.0
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 10.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	4.550
Del. quantity cm3/1000 strokes		120.0
Tolerance	;	120.0
cm3/1000 strokes	: +-	20.0
Check tolerance cm3/1000s.		25.0
CMS/ (UUUS.	. +	۵.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 20.10.97 : ISO 4113

Combination No. : 0 402 046 862

Injection pump

Pump designation : PES6P120A320RS3337

EP type number : 0 412 026 770

Governor

Governer design. : RQV300...1250PA1149K

Governer no.

: 0 421 815 416

Cust. part No. : CCEP 5141A 66-218

Customer-spec. information

Customer : RENAULT V.I.

Motor

: MIDR 06-02-26 V4

Power KW

: 133.0

TEST BENCH REQUIREMENTS

Inlet line

: 3.2

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve

: 2 417 413 084

Inlet press. bar : 2.5

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar

: + 1.5

: 1 680 750 008

Outside diameter : 6.0

Test lines

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 4.10 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : \leftarrow 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery mark

*NW after s.o.d. : -0.18

: ← 0.50 Tolerance

Check

tolerance °NW : + 0.75

: 1 Barrel no.

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

10.50 travel

Difference ° CS : 2.00

CRT ZERO POSITION

		† Tolerance mm : + 0.20
- 4	44 22	1
Rack travel in m		Rated speed rpm : 905
Tolerance mm	: +- 0.05	guide sleeve travel mm : 6.54
BASIC SETTING		T rocer arice man
DADIC DETTING		Rated speed rpm : 381
Rated speed rpm	: 1250	- guide sleeve
, , , , , , , , , , , , , , , , , , , ,		+ travel mm : 2.38
Del. quantity		Tolerance mm : +- 0.25
cm3/1000 strokes	: 152.0	†
		Rated speed rpm : 431
Tolerance		guide sleeve
cm3/1000 strokes	: +- 1.0	travel mm : 2.98 Tolerance mm : + 0.25
Check tolerance		Toterance in : + 0.25
cm3/1000s.	: + 4.0	Rated speed rpm : 530
CIRC/ 10000 .	• · • • •	guide sleeve
Spreed		travel mm : 3.77
•		Tolerance mm : + 0.25
Tolerance		†
cm3/1000 strokes	: 5.0	Rated speed rpm : 1580
~! ! . !		guide sleeve
Check tolerance	. 0.0	+ travel mm : 13.50
cm3/1000s.	: 9.0	Tolerance mm : + 0.50
		I
		GUIDE SLEEVE POSITION
Rated speed rpm	: 300	
Marra opera i p		+
Rack travel in m		+ control lever
Tolerance mm	: + 0.10	position degree : - 1
Del. quantity	7. 6	+ Rated speed rpm : 1380
cm3/1000 strokes	: 34.0	† Rack travel in mm : 10.50
Tolerance cm3/1000 strokes	20	+ Rack travel in mm : 10.50 + Tolerance mm : +- 1.30
Check tolerance	; - 2.0	Toterance min : 1.50
cm3/1000s.	: +- 5.0	
Spreed		FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance		-
cm3/1000 strokes	: 8.0	Rated speed rpm : 1250
Check tolerance		+ Aneroid pressure
cm3/1000s.	: 12.0	+ hPa : 1000
		+ Del. quantity
40) 00000000	LICATION DUMB	+ cm3/1000 strokes : 152.0
(B) SETTING OF IN	NJECTION PUMP	+ Tolerance + cm3/1000 strokes : +- 1.0
WITH GOVERNOR		+ Check tolerance
		+ cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAN	/Fl	+ Spreed
COLUMN COLUMN TOTAL	-	+ Tolerance
Rated speed rpm	: 1346	- cm3/1000 strokes : 5.0
guide sleeve		+ Check tolerance
travel mm	: 10.55	+ cm3/1000s. : 9.0
Tolerance mm	: +- 0.15	†
D-4-4	. 700	
Rated speed rpm	: 300	CONTROL LEVER
guide sleeve travel mm	: 1.31	T CONTROL LLVER
CLASEC HAIL	: 1.31	l e e e e e e e e e e e e e e e e e e e

control lever position degree tolerance degree	: 297.0 : ← 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: -1.00 : 1325 : +- 15
rack travel mm Rated speed rpm Tolerance 1/min	: 1420
rack travel mm Tolerance mm Rated speed rpm	: -10.70 : +- 0.50 : 1550
LOW IDLE	
control lever position degree tolerance degree	: 244.0 : + 4.0
Setting point w/c	out bumper spring
Rated speed rpm	: 200
CRT mm min.	: < -5.20
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : -6.30 : +- 0.10
Rated speed rpm	: 400
TORQUE CONTROL Rated speed rpm	: 1250
Rated speed rpm rack travel mm Tolerance mm	: 850 : -1.35 : + 0.15
Rated speed rpm rack travel mm Tolerance mm	: 350 : −1.60 : ← 0.20
ANEROID/ALTITUDE COMPENSATOR TEST	

Rated speed rpm Pressure hPa	: 1250 : 1000
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1250 : - : -1.90 : + 0.20
MEASUREMENT	
Rated speed rpm	: 1250
Pressure hPa rack travel mm Tolerance mm	: 160 : −1.30 : ← 0.10
Pressure hPa rack travel mm Tolerance mm	: 280 : -0.25 : + 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 175 : < 240
Check speed 1/min Check	: > 155
speed 1/min	: < 260
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1000 : 850 : 124.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1000 : 850 : 124.0 : + 3.0

Rated speed rpm	:	100
Del. quantity cm3/1000 strokes	:	108.0
Tolerance cm3/1000 strokes	: +-	15.0
Check tolerance cm3/1000s.	: +-	19.0

LOW IDLE

Rated speed rpm	:		300
Rack travel in mm	:		-6.30
Tolerance mm	•	+-	0.10
Del. quantity			
cm3/1000 strokes	:		34.0
Tolerance			
cm3/1000 strokes	:	+	2.0
Check tolerance			
cm3/1000s.	:	+-	5.0
Spreed			
Tolerance			
cm3/1000 strokes	:		8.0
Check tolerance			
cm3/1000S.	•		12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20,10,97 Test oil : ISO 4113

Combination No. : 0 402 046 864

Injection pump

Pump designation : PES6P120A320RS3337

: -1

EP type number : 0 412 026 772

Governor

Governer design. : RQV300...1250PA1149

: -1K

Governer no. : 0 421 815 421

Cust. part No. : CCEP 5142B 66-219

Customer-spec. information

Customer : RENAULT V.I. : MIDR 06-02-26 W4 Motor

Power KW : 155.0

TEST BENCH REQUIREMENTS

: 3.2 Inlet line

Test oil inlet

temp. °C

Tolerance °C 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 125 Tolerance l/h : + 20.0 : 125

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.15
Tolerance mm : + 0.05

Check

: + 0.10 tolerance mm

Rack travel in mm : 13.00

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

: +- 0.75 tolerance °NW

Start of delivery mark

*NW after s.o.d. : -0.35

Tolerance : **←** 0.50

Check

tolerance *NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

13.00 travel

Difference • CS	: 2.00	Tolerance mm : +- 0.15
		Rated speed rpm : 300 guide sleeve
CRT ZERO POSITION	v +	travel mm : 1.31
	1	Tolerance mm : +- 0.20
Rack travel in mm Tolerance mm		Rated speed rpm : 876 guide sleeve
roceratice in	1	
		travel mm : 6.02 Tolerance mm : + 0.25
BASIC SETTING	1	Rated speed rpm : 510
Rated speed rpm	. 1250	guide sleeve
kated speed rpm	· 1230	travel mm : 3.59
Dal manda.		
Del. quantity cm3/1000 strokes	: 194.0	
#.1		Rated speed rpm : 1600
Tolerance		guide sleeve travel mm : 13.50
cm3/1000 strokes	: + 1.0 +	
	 †	Tolerance mm : +- 0.50
Check tolerance	+	
c m 3/1000S.	: ← 4.0 ‡	
	}	GUIDE SLEEVE POSITION
Spreed	į	
Tolerance	1	control lever
cm3/1000 strokes	. 50	position degree : -1
CIID/ 1000 Strokes	. 5.0	Rated speed rpm : 1415
Charle halamana	T	Rateu speed (piii . 141)
Check tolerance	T	Deals Annual in the 12 15
cm3/1000S.	: 9.0	Rack travel in mm: 12.15
		Tolerance mm : +- 2.03
	†	
	+	
Rated speed rpm	: 300 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	8 30 1	Rated speed rpm : 1250
Tolerance mm		Aneroid pressure
	· — 0.10	hPa : 1000
Del. quantity	24.0	
cm3/1000 strokes	: 21.0	Del. quantity
Tolerance	†	cm3/1000 strokes : 194.0
cm3/1000 strokes	: ← 1.0 +	Tolerance
Check tolerance	t t	cm3/1000 strokes : +- 1.0
c m 3/1000s.	: + 5.0 +	Check tolerance
Spreed	+	cm3/1000s. : +- 4.0
Tolerance	+	Spreed
cm3/1000 strokes	: 8.0 +	Tolerance
Check tolerance	+	cm3/1000 strokes : 5.0
cm3/1000s.	: 12.0 +	Check tolerance
	À	cm3/1000s. : 9.0
	+	
(B) SETTING OF IN	JECTION PUMP	
WITH GOVERNOR	1	
WELLI GOLEWIANI	1	CONTROL LEVER
		JOHNNOE EEVEN
CUIDE OF EEUE TOAL	, <u>-</u>	control lever
GUIDE SLEEVE TRAV	TEL †	
natural 1 :	1739	position degree : 296.0
Rated speed rpm	: 1328	tolerance degree : +- 4.0
guide sleeve	+	
travel mm	: 9.98 +	RATED SPEED

rack travel mm : -1.00 Rated speed rpm : 1317 Tolerance 1/min : ← 15 -8.80 rack travel mm Rated speed rpm : 1450 Tolerance 1/min : +- 5 rack travel mm : -12.30 Tolerance mn: +- 0.50 Rated speed rpm : 1550 LOW IDLE control lever position degree : 245.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 200 CRT mm min. : < -7.50Testing: Rated speed rpm : 300 -8.30 rack travel mm : : +- 0.10 Tolerance mm Rated speed rpm : 400 TORQUE CONTROL Rated speed rpm : 1250 Rated speed rpm : 850 rack travel mm : -1.75 rack travel mm : + 0.05Tolerance mm Rated speed rpm : 350 rack travel mm : -1.50 Tolerance mm : + 0.30 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 1000 1000 Pressure hPa :

-1.40

Pressure hPa : - rack travel mm : -3.50 : +- 0.20 Tolerance mm **MEASUREMENT** Rated speed rpm : 1000 : 160 Pressure hPa : -3.10 rack travel mm : +- 0.15 Tolerance mm Pressure hPa : 280 rack travel mm : -2.05 Tolerance mm : +- 0.05 Start interlock Rated speed rpm : > 175 Rated speed rpm : < 240 Check : > speed 1/min 155 Check speed 1/min : < 260 FUEL DELIVERY CHARACTERISTICS Aneroid pressure 1000 hPa Rated speed rpm : 850 Del. quantity cm3/1000 strokes : 139.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance : +- 6.0 cm3/1000s. Aneroid pressure

Aneroid pressure
hPa : Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 120.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity

cm3/1000 strokes : 102.0

rack travel mm :

Rated speed rpm : 1000

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s.: +- 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm: -8.30 Tolerance mm $: \leftarrow 0.10$

Del. quantity

cm3/1000 strokes : 21.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 5.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 20.10.97

Test oil

: ISO 4113

Combination No. : 0 402 066 708

Injection pump

Pump designation : PES6P120A120RS3358

EP type number : 0 412 026 784

Governor

Governer design. : RSV475...1150P2A619

Governer no. : 0 421 833 522

Cust. part No. : 3283019

Customer-spec. information

Customer : CDC

Motor

: 6BTA-590 ELITE : 136.0

Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40

Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

100 min. L/h

Tolerance l/h: \leftarrow 20.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : \leftarrow 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

: **←** 0.75 tolerance °NW

Start of delivery blocking

*NW after s.o.d. : 6.75

Tolerance : + 0.10

Check

tolerance "NW : \leftarrow 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

	+
Rack travel in mm : 11.60 - Tolerance mm : +- 0.05 -	- FULL LOAD DELIVERY AT FULL LOAD STOP - Rated speed rpm : 1150
Del. quantity cm3/1000 strokes : 150.0	- Rated speed rpm : 1150 - Aneroid pressure - hPa : 1500 - Del. quantity
Tolerance cm3/1000 strokes : + 1.0	- cm3/1000 strokes : 150.0 - Tolerance - cm3/1000 strokes : + 1.0
Check tolerance cm3/1000s. : + 3.0	Check tolerance cm3/1000s. : +- 3.0 Spreed
Spreed	Tolerance - cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	- Check tolerance - cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	CONTROL LEVER
Rated speed rpm : 470	- control lever - position degree : 106.0 - tolerance degree : +- 4.0
Rack travel in mm: 5.30 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 25.0	- RATED SPEED - rack travel mm : 10.60 - Rated speed rpm : 1195
Tolerance cm3/1000 strokes : + 2.0 Check tolerance	- Tolerance 1/min : +- 5 - - rack travel mm : 4.00
cm3/1000s. : + 4.5 Spreed Tolerance	- Rated speed rpm : 1300 - Tolerance 1/min : +- 15
cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0	- rack travel mm : 0.85 - Tolerance mm : +- 0.55 - Rated speed rpm : 1400
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1310 Tolerance 1/min : + 15
GUIDE SLEEVE POSITION	- LOW IDLE
control lever position degree : -3 Rated speed rpm : 800	control lever position degree : 85.0 tolerance degree : +- 4.0
Rack travel in mm: 0.50 + Tolerance mm: + 0.20 +	- Setting point w/out bumper spring
governor spring pre-tension click setting x : 4.50	Rated speed rpm : 470 - rack travel mm : 4.80 - Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 470 rack travel mm 5.30 : + 0.10Tolerance mm

2.00 rack travel mm Rated speed rpm 610 Tolerance 1/min

TORQUE CONTROL

1150 Rated speed rpm 11.60 rack travel mm : +- 0.05 Tolerance mm

750 Rated speed rpm : 11.65 rack travel mm : + 0.10Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm 500 Pressure hPa 1500 rack travel mm 11.65 Tolerance mm : +- 0.10

500 Rated speed rpm Pressure hPa 8.50 rack travel mm Tolerance mm : +- 0.20

MEASUREMENT

500 Rated speed rpm

900 Pressure hPa rack travel mm 11.00 : +- 0.20 Tolerance mm

560 Pressure hPa rack travel mm 9.60 : + 0.05Tolerance mm

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1500 750 Rated speed rpm

Del. quantity

cm3/1000 strokes : 167.0

Tolerance

3.0 cm3/1000 strokes : +-Check tolerance cm3/1000s.: +- 6.0 Spreed

Tolerance

cm3/1000 strokes : 12.0

Check tolerance

cm3/1000s. 16.0

Aneroid pressure

hPa 500 Rated speed rpm Del. quantity

cm3/1000 strokes : 90.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. 4.0

STARTING FUEL DELIVERY

Rated speed rpm 100 20.25 rack travel mm : : **←** 0.75 Tolerance mm Del. quantity cm3/1000 strokes: 165.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance

cm3/1000s. : + 25.0

LOW IDLE

Rated speed rpm : 470

5.30 Rack travel in mm: Tolerance mm : +- 0.10 Del. quantity 25.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : +-2.0

Check tolerance cm3/1000s. 4.5

Spreed Tolerance

cm3/1000 strokes : 6.0 Check tolerance

9.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.09.97 Test oil : ISO 4113

Combination No. : 0 402 646 603

Injection pump

Pump designation : PE6P120A720RS7022 EP type number : 0 412 626 873

Governor

Governer design. : RQV200...1000PA539

: -15

Governer no. : 0 421 814 013

Cust. part No. : 1340658

Customer—spec. information Customer : SCANIA Motor : DS11 75

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : \leftarrow 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : \leftarrow 0.50

Check

tolerance $^{\circ}NW$: \leftarrow 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rom : 700	+ guide sleeve + travel mm; : 4.99
	+ Tolerance mm : + 0.25
Rack travel in mm : 12.15	+
Tolerance mm : +- 0.05	+ Rated speed rpm : 274
	+ guide sleeve
Del. quantity	† travel mm : 1.92
cm3/1000 strokes : 209.0	+ Tolerance mm : +- 0.25
	+
Tolerance	+ Rated speed rpm : 324
cm3/1000 strokes : + 1.0	+ guide sleeve
	+ travel mm : 2.44
Check tolerance	+ Tolerance mm : + 0.25
cm3/1000S. : + 4.0	†
	+ Rated speed rpm : 380
Spreed	+ guide sleeve
+ 1	travel mm : 2.85
Tolerance	Tolerance mm : +- 0.25
cm3/1000 strokes : 8.0	T Dated and a 1270
Charle to Language	Rated speed rpm : 1270
Check tolerance cm3/1000s. : 12.0	<pre>guide sleeve travel mm : 11.50</pre>
cm3/1000s. : 12.0	+ Tolerance mm : +- 0.50
	1 Toterance mm . + 0.50
	I
Rated speed rpm : 250	GUIDE SLEEVE POSITION
Rated Speed Ppill . 250	T GOIDE SECENC / GOI/10/V
Rack travel in mm : 4.70	
Tolerance mm : + 0.10	+ control lever
Del. quantity	position degree : - 1
cm3/1000 strokes : 17.0	Rated speed rpm : 1050
Tolerance	The second secon
cm3/1000 strokes : + 2.0	Rack travel in mm: 16.50
Check tolerance	+ Tolerance mm : + 1.30
cm3/1000s. : +- 5.0	+
Spreed	<u> </u>
Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : 4.0	+
Check tolerance	+ Rated speed rpm : 700
cm3/1000s. : 8.0	+ Aneroid pressure
	† hPa : 1500
	+ Del. quantity
(B) SETTING OF INJECTION PUMP	+ cm3/1000 strokes : 209.0
WITH GOVERNOR	+ Tolerance
	cm3/1000 strokes : +- 1.0
OUTS OF STATE TO COME	Check tolerance
GUIDE SLEEVE TRAVEL	+ cm3/1000s. : + 4.0
Detail annual annual annual annual annual annual annual annual annual annual annual annual annual annual annual	- Spreed
Rated speed rpm : 1056	+ Tolerance + cm3/1000 strokes : 8.0
guide sleeve travel mm : 8.57	+ Check tolerance
	+ cm3/1000s. : 12.0
Tolerance mm : +- 0.25	T (m)/10003 12.0
Rated speed rpm : 250	\mathbf{I}
Rated speed rpm : 250 - guide sleeve	
travel mm : 1.66	CONTROL LEVER
Tolerance mm : + 0.25	JOHNNOE EEVEN
FORCE CHIEF HAIL U.E.	control lever
Rated speed rpm : 689	position degree : 64.0
The state of the s	tolerance degree : + 4.0
	,

		†
control lever position degree tolerance degree	: 116.0 : + 4.0	ANEROID/ALTITUDE COMPENSATOR TEST
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 10 45	SETTING Rated speed rpm : 500
rack travel mm Rated speed rpm Tolerance 1/min		Pressure hPa : 1500 rack travel mm : 12.15 Tolerance mm : + 0.05
rack travel mm Tolerance mm Rated speed rpm	: 0.50	Rated speed rpm : 500 Pressure hPa : - rack travel mm : 10.10 Tolerance mm : + 0.20
		MEASUREMENT +
LOW IDLE		Rated speed rpm : 500
control lever	(7.0	Pressure hPa : 390 rack travel mm : 10.60 Tolerance mm : + 0.15
position degree tolerance degree control lever		+ Pressure hPa : 590 + rack travel mm : 11.65 + Tolerance mm : + 0.05
position degree tolerance degree		
Setting point w/d	out bumper spring	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 150	<u> </u>
		Aneroid pressure
CRT mm min.	: > 6.20	Aneroid pressure hPa : 1500 Rated speed rpm : 1000
CRT mm min. Testing:	: > 6.20	hPa : 1500 Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 198.0
Testing: Rated speed rpm rack travel mm	: > 6.20 : 250 : 4.70	hPa : 1500 Rated speed rpm : 1000 bel. quantity cm3/1000 strokes : 198.0 Tolerance cm3/1000 strokes : +- 4.0
Testing: Rated speed rpm rack travel mm Tolerance mm	: > 6.20 : 250 : 4.70 : ← 0.10	hPa : 1500 Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 198.0 Tolerance
Testing: Rated speed rpm rack travel mm	: > 6.20 : 250 : 4.70	hPa : 1500 Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 198.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 6.0 Aneroid pressure hPa : -
Testing: Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm	: > 6.20 : 250 : 4.70 : ← 0.10 : 2.00 : 400	hPa : 1500 Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 198.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 6.0 Aneroid pressure

STARTING FUEL DELIVERY

Rated speed rpm rack travel mm Tolerance mm	: 100 : 10.10 : ← 0.20
Del. quantity cm3/1000 strokes Tolerance	: 160.0
cm3/1000 strokes Check tolerance	: +- 20.0
cm3/1000s.	: ← 24.0

LOW IDLE

Rated speed rpm	:		250
Rack travel in mm Tolerance mm Del. quantity		+	4.70 0.10
cm3/1000 strokes	:		17.0
cm3/1000 strokes Check tolerance	:	+	2.0
cm3/1000s. Spreed	•	+	5.0
Tolerance cm3/1000 strokes	:		4.0
Check tolerance cm3/1000s.	:		8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.10.97 Test oil : ISO 4113

Combination No. : 0 402 646 623

Injection pump

Pump designation : PE6P120A320RS7288

: -10

EP type number : 0 412 626 918

Governor

Governer design. : RQV250...900PA1069

: -1

Governer no. : 0 421 814 070

Cust. part No. : 866141 PO4 v. 10/94

Customer—spec. information
Customer : PENTA

Motor : TAD 1030P

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. $^{\circ}$ C : 40 Tolerance $^{\circ}$ C : + 2.0

Overflow valve : 1 417 413 077

Inlet press. bar : 2.5 Tolerance bar : ← 0.1

Overflow quantity

min. l/h : 300 Tolerance l/h : \leftarrow 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.45
Tolerance mm : + 0.05
Check

uneck

tolerance mm : +- 0.10

Rack travel in mm : 10.00 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : \leftarrow 0.50

Check

tolerance $^{\circ}NW$: + 0.75

Barrel no. : 1

+	- Tolerance mm : + 0.25
BASIC SETTING	- - Rated speed rpm : 657 - guide sleeve
Rated speed rpm : 700	- travel mm : 5.07 - Tolerance mm : +- 0.25
Rack travel in mm : 13.45 Tolerance mm : +- 0.05	- Rated speed rpm : 315 - guide sleeve
Del. quantity cm3/1000 strokes : 290.0	- travel mm : 1.98 - Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : + 1.0	- Rated speed rpm : 365 - guide sleeve - travel mm : 2.63
Check tolerance cm3/1000s. : + 4.0	- Tolerance mm : +- 0.25 - - Rated speed rpm : 420
Spreed	- Rated speed rpm : 420 - guide sleeve - travel mm : 3.17
Tolerance	- Tolerance mm : +- 0.25
cm3/1000 strokes : 6.0 Check tolerance	- Rated speed rpm : 1290 - guide sleeve - travel mm : 11.50
cm3/1000s. : 10.0	Tolerance mm : +- 0.50
Rated speed rpm : 250	- GUIDE SLEEVE POSITION
Rack travel in mm: 7.70 Tolerance mm: + 0.10 Del. quantity	control lever position degree : - 1 Rated speed rpm : 1150
cm3/1000 strokes : 18.0 + Tolerance cm3/1000 strokes : + 3.0 + Tolerance cm3/1000 str	- Rack travel in mm : 9.00 - Tolerance mm : +- 3.00
Check tolerance cm3/1000S. : + 5.0 Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes : 7.0 Check tolerance	Rated speed rpm : 700 Aneroid pressure
cm3/1000s. : 11.0	hPa : 1500 Del. quantity cm3/1000 strokes : 290.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance : +- 1.0 Check tolerance
GUIDE SLEEVE TRAVEL	cm3/1000S. : +- 4.0 Spreed Tolerance
Rated speed rpm : 949 guide sleeve	cm3/1000 strokes : 6.0 Check tolerance
travel mm : 7.39 Tolerance mm : + 0.25	cm3/1000s. : 10.0
Rated speed rpm : 250 guide sleeve	CONTROL LEVER
travel mm : 1.12	

control lever position degree : 64.0 AMEROID/ALTITUDE tolerance degree : + 4.0 COMPENSATOR TEST control lever position degree : 119.0 SETTING tolerance degree : +- 4.0 RATED SPEED rack travel mm 12.45 Rated speed rpm 935 : +- 5 Tolerance 1/min rack travel mm 4.00 Pressure hPa rack travel mm Rated speed rpm 1075 Tolerance 1/min : ← Tolerance mm rack travel mm : 0.50 MEASUREMENT : +- 0.50 Tolerance mm Rated speed rpm : 1150 Pressure hPa LOW IDLE Pressure hPa rack travel mm control lever Tolerance mm position degree : 74.0 tolerance degree : +- 4.0 control lever position degree : 24.0 tolerance degree : + 4.0 Aneroid pressure Setting point w/out bumper spring hPa Del. quantity Rated speed rpm : CRT mm min. : > 9.00 Tolerance Check tolerance Testing: cm3/1000s. 250 Rated speed rpm : 7.70 rack travel mm : : +- 0.10 Tolerance mm Rated speed rpm : 350 LOW IDLE TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 13.4 13.45 Tolerance mm : \leftarrow 0.05

Rated speed rpm : 500 Pressure hPa : 1500 rack travel mm : 13.45 Tolerance mm : + 0.05 Rated speed rpm : 500 10.00 : +- 0.10 Rated speed rpm : 500 : 200 10.30 rack travel mm : Tolerance mm : + 0.10 : 1090 : 13.15 : +- 0.05 FUEL DELIVERY CHARACTERISTICS 700 Rated speed rpm : cm3/1000 strokes : 176.0 cm3/1000 strokes : +- 1.0 : +- 4.0 Rated speed rpm : 250 Rack travel in mm: 7.70 Tolerance mm : \leftarrow 0.10 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : ← 5.0

Spreed

Tolerance cm3/1000 strokes : 7.0

theck tolerance

cm3/1000s. 11.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 10.02.97 : ISO 4113

Combination No. : 0 402 646 640

Injection pump

Pump designation : PE6P120A320RS7311

: -10

EP type number

: 0 412 626 932

Governor

Governer design. : RQV275...1150PA1110K

Governer no.

: 0 421 815 375

Cust. part No. : 1280143/7

Customer-spec. information Customer : DAF

Motor

: RS 222 M

Power KW

: 222.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

: 208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

3.0

x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : \leftarrow 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance

: **←** 0.30

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : \leftarrow 0.10

Check

tolerance °NW

: +- 0.75

Barrel no.

: 1

BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm: 13.55

Tolerance mm : \leftarrow 0.05

Del. quantity cm3/1000 strokes	: 218.0 -	Tolerance mm	: +- 0.25 : 350
Tolerance cm3/1000 strokes	· + 10	Rated speed rpm guide sleeve travel mm	: 350 : 2.90
Check tolerance		Tolerance mm	: + 0.25
	: +- 4.0	Rated speed rpm guide sleeve	: 460
Spreed	-	travel mm Tolerance mm	: 3.90 : + 0.25
Tolerance cm3/1000 strokes	: 5.0	Rated speed rpm guide sleeve	: 1480
Check tolerance cm3/1000s.	: 9.0	travel mm Tolerance mm	: 13.50 : +- 0.50
Rated speed rpm	: 275	- GUIDE SLEEVE POSI	TION
Rack travel in mm Tolerance mm Del. quantity	: 3.80 : + 0.10	- control lever - position degree - Rated speed rpm	
cm3/1000 strokes Tolerance	-	- Rack travel in mm	n: 12.80
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 3.0 : +- 6.0	- Tolerance mm	: +- 1.30
Spreed Tolerance	-	- FULL LOAD DELIVER	RY AT FULL LOAD STOP
cm3/1000 strokes Check tolerance	-	Rated speed rpm Aneroid pressure	: 1130
cm3/1000s.	: 12.0	- hPa - Del. quantity - cm3/1000 strokes	: 218.0
(B) SETTING OF INJE WITH GOVERNOR	ECTION PUMP -	Tolerance cm3/1000 strokes Check tolerance	
GUIDE SLEEVE TRAVEL	_	- cm3/1000s. - Spreed	: +- 4.0
Rated speed rpm : guide sleeve	: 1203	Tolerance cm3/1000 strokes Check tolerance	: 5.0
travel mm :	: 10.07 : +- 0.25	- cm3/1000s.	: 9.0
guide sleeve	275	- CONTROL LEVER	
travel mm : Tolerance mm :	: 1.56 - : + 0.25 -	- - control lever - position degree	: 121.0
Rated speed rpm : guide sleeve	: 814	- tolerance degree -	
travel mm : Tolerance mm :	: 6.79 : +- 0.25	- RATED SPEED - rack travel mm	
Rated speed rpm : guide sleeve	: 300	- Rated speed rpm - Tolerance 1/min -	
travel mm :	2.13	- rack travel mm	: 4.00

Rated speed rpm : Tolerance 1/min : rack travel mm : Tolerance mm : Rated speed rpm :	1315 ← 15 0.70 ← 0.70 1450
LOW IDLE	
control lever position degree : tolerance degree :	59.0 ← 4.0
Setting point w/out	bumper spring
Rated speed rpm :	175
CRT mm min. :	> 6.00
Testing:	
Rated speed rpm : rack travel mm : Tolerance mm :	275 3.80 + 0.10
rack travel mm : Rated speed rpm : Tolerance 1/min :	2.00 330 +- 20
TORQUE CONTROL Rated speed rpm : rack travel nxm : Tolerance mxm :	1130 13.55 + 0.05
Rated speed rpm : rack travel mm : Tolerance mm :	850 12.80 → 0.05
Rated speed rpm : rack travel mm : Tolerance mm :	775 12.45 +- 0.10
Rated speed rpm : rack travel mm : Tolerance mm :	650 12.20 + 0.10
Rated speed rpm : rack travel mm : Tolerance mm :	500 12.10 ← 0.10

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Rated speed rpm	: 1130
Pressure hPa	: 1500
rack travel mm	: 13.55
Tolerance mm	: + 0.05
Rated speed rpm	: 1130
Pressure hPa	: -
rack travel mm	: 9.40
Tolerance mm	: +- 0.10
MEASUREMENT	
Rated speed opm	: 1130
Pressure hPa	: 580
rack travel mm	: 12.40
Tolerance mm	: + 0.05
Pressure hPa	: 320
rack travel mm	: 10.60
Tolerance mm	: +- 0.10

FUEL DELIVERY CHARACTERISTICS

FOEL DELIVERT CHA	WWC1EKTO11CO
Aneroid pressure	
hPa	: -
Rated speed rpm	: 850
Del. quantity	
cm3/1000 strokes	: 224.0
Tolerance	
cm3/1000 strokes	: +- 2.0
Check tolerance	
cm3/1000s.	: +- 5.0
Spreed	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	. 40.0
cm3/1000s.	: 12.0
Aneroid pressure	
hPa	. ~
Rated speed rpm	: 600
Del. quantity	
cm3/1000 strokes	: 146.5
Tolerance	
cm3/1000 strokes	: - 1.0
Check tolerance	
cm3/1000s.	: +- 4.0

LOW IDLE

Rated speed rpm : 275 Rack travel in mm : 3.80 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s.: + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.: 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 21.10.97 : ISO 4113

Combination No. : 0 402 646 680

Injection pump

Pump designation : PE6P12OA32ORS7447

EP type number : 0 412 626 970

Governor

Governer design. : RQ275/1150PA1361

Governer no. : 0 421 801 825

Cust. part No. : 1329586

Customer-spec. information

Customer : DAF

: GS 200-RQ Motor : 200.0

Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

: 40 : + 2.0 40 temp. °C Tolerance °C

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 150
Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 11.70

Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 ÷ + 0.50 Tolerance

Check

tolerance "NW : → 0.75

Start of delivery mark

Tolerance : \leftarrow 0.10

Check

tolerance °NW : +- 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.70

1	guide sleeve
Del. quantity cm3/1000 strokes : 178.0	travel mm : 4.47 Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 440 guide sleeve
Check tolerance cm3/1000s. : + 4.0	travel mm : 6.00 Tolerance mm : + 0.10
Spreed	Rated speed rpm : 1360 guide sleeve
Tolerance cm3/1000 strokes : 5.0	travel mm : 11.50 Tolerance mm : + 0.50
Check tolerance cm3/1000s. : 9.0	GUIDE SLEEVE POSITION
	Rated speed rpm : 600
Rated speed rpm : 275	Rack travel in mm : 16.00 Tolerance mm : +- 0.40
Rack travel in mm: 5.25 Tolerance mm: + 0.10 Del. quantity	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : 32.0 + Tolerance +	Rated speed rpm : 1000 Aneroid pressure
cm3/1000 strokes : + 1.0 + Check tolerance +	hPa : 1000 Del. quantity
cm3/1000s. : + 4.0 + 5	cm3/1000 strokes : 178.0 Tolerance
Tolerance + cm3/1000 strokes : 8.0 +	cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : 12.0	cm3/1000s. : +- 4.0 Spreed
	Tolerance cm3/1000 strokes : 5.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR +	Check tolerance cm3/1000s. : 9.0
GUIDE SLEEVE TRAVEL	CONTROL LEVER
Rated speed rpm : 1205 guide sleeve	control lever
travel mm : 6.49	position degree : 99.0
Tolerance mm : + 0.15	tolerance degree : +- 4.0
Rated speed rpm : 275 guide sleeve	RATED SPEED rack travel mm : 10.70
travel mm : 1.97	Rated speed rpm : 1202
Tolerance mm : + 0.20	Tolerance 1/min : +- 8
Rated speed rpm : 1150 + guide sleeve +	rack travel mm : 4.00 Rated speed rpm : 1280
travel mm : 6.00 + Tolerance mm : + 0.10	Tolerance 1/min : +- 15
Rated speed rpm : 356	rack travel mm : 0.70 Tolerance mm : + 0.70
+	Rated speed rpm : 1450

LOW IDLE

control lever

position degree : 73.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 6.40

Testing:

Rated speed rpm : 275
rack travel mm : 5.25
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 355
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 11.70 Tolerance mm : + 0.05

Rated speed rpm : 1150 rack travel mm : 11.70 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.70
Tolerance mm : + 0.05

Rated speed rpm : 600
Pressure hPa : rack travel mm : 6.70
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 220 rack travel mm : 10.50

Tolerance mm : +- 0.05

Pressure hPa : 100 rack travel mm : 8.10 Tolerance mm : +- 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 101.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0

cm3/1000S. : ← 6.0 Spreed

Tolerance

cm3/1000 strokes : 8.0 Check tolerance

cm3/1000s. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm: 5.25
Tolerance mm: + 0.10
Del. quantity
cm3/1000 strokes: 32.0

Tolerance

cm3/1000 strokes : \leftarrow 1.0

Check tolerance cm3/1000s.

cm3/1000s. : +- 4.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

End of test specification sheet

G05

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 22.10.97 Test oil : ISO 4113

Combination No. : 0 402 648 605

Injection pump

Pump designation : PE8P12OA92O/5RS7448

EP type number : 0 412 628 930

Governor

Governer design. : RQV300...1100PA1363

Governer no. : 0 421 814 203

Cust. part No. :

Customer-spec. information

Customer : KAMAZ

Motor : 740.51-320

Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 230 Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.10 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 19.50 Tolerance mm : + 1.50

Firing order : 1-7-5-2-4

: - 3- 8- 6

Phasing : 0-45-90-135-180

: -225-270-315

: **←** 0.50 Tolerance

Check

tolerance 'NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 8.30

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 138.0

Tolerance

cm3/1000 strokes : \leftarrow 1.0

Check tolerance cm3/1000s.	: ← 4.0	control lever position degree : - 1
Spreed		Rated speed rpm : 1435
Tolerance cm3/1000 strokes	: 5.0	Rack travel in mm : 7.30 Tolerance mm : +- 1.30
Check tolerance cm3/1000s.	: 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
	700	Rated speed rpm : 1100 Aneroid pressure
Rated speed rpm		+ hPa : 600 + Del. quantity
Rack travel in ma Tolerance man Del. quantity		+ cm3/1000 strokes : 138.0 + Tolerance + cm3/1000 strokes : +- 1.0
cm3/1000 strokes Tolerance		+ Check tolerance + cm3/1000s. : + 4.0
cm3/1000 strokes Check tolerance		+ Spreed + Tolerance
cm3/1000s. Spreed	: +- 6.0	cm3/1000 strokes : 5.0 Check tolerance
Tolerance cm3/1000 strokes Check tolerance		+ cm3/1000s. : 9.0
cm3/1000s.		CONTROL LEVER
(B) SETTING OF IN	NJECTION PUMP	control lever position degree : 59.0 tolerance degree : + 4.0
GUIDE SLEEVE TRAV	/EL	control lever
Rated speed rpm guide sleeve		tolerance degree : + 4.0
travel mm Tolerance mm	: 6.77 : + 0.15	+ RATED SPEED + rack travel mm : 7.30 + Rated speed rpm : 1147
Rated speed rpm guide sleeve	: 300	+ Rated speed rpm : 1147 + Tolerance 1/min : +- 5 + Check
travel mm Tolerance mm	: 0.93 : +- 0.20	speed 1/min : +- 10
Rated speed rpm guide sleeve	: 574	+ rack travel mm : 4.00 + Rated speed rpm : 1230 + Tolerance 1/min : +- 15
travel mm Tolerance mm	: 2.87 : + 0.25	Check + speed 1/min : +- 20
Rated speed rpm guide sleeve	: 1540	+ rack travel mm : 0.50 + Tolerance mm : +- 0.50
travel mm Tolerance mm	: 11.50 : + 0.50	Rated speed rpm : 1340
GUIDE SLEEVE POST	ITION	
		1 ION TOLE

LOW IDLE

		+ Tolerance mm	: +- 0.05
control lever position degree tolerance degree	: 64.0 : +- 4.0	<u> </u>	
		FUEL DELIVERY CHA	ARACTERISTICS
control lever position degree	• 70	İ	
tolerance degree	: + 4.0	+ Aneroid pressure	
0.41	. 1	+ hPa	: 600
setting point w/c	out bumper spring	+ Rated speed rpm + Del. quantity	
Rated speed rpm	: 200	cm3/1000 strokes Tolerance	: 133.0
CRT mm min.	: > 5.30	cm3/1000 strokes	: +- 4.0
Testing:		cm3/1000s.	: + 6.0
Rated speed rpm	: 300	Ī	
rack travel mm	: 4.40	+ Aneroid pressure	
Tolerance mm	: + 0.10	+ hPa + Rated speed rpm	: 500
Rated speed rpm	: 275	+ Del. quantity	. 500
		cm3/1000 strokes Tolerance	: 89.0
TORQUE CONTROL		+ cm3/1000 strokes	: 1.0
Raced speed rpm rack travel mm		+ Check tolerance + cm3/1000s.	: +- 4.0
Tolerance mm		T CIID/10003.	: +- 4.0
		+	
Rated speed rpm rack travel mm	: 700 : 8.30	STARTING FUEL DEL	TUEDY
Tolerance mm	: + 0.10	STARTING FUEL DEL	TIVERT
		+ Rated speed rpm	: 100
ANEROID/ALTITUDE		+ Del. quantity + cm3/1000 strokes	: 270.0
COMPENSATOR TEST		+ Tolerance	: 270.0
		+ cm3/1000 strokes	: ← 15.0
CETTANG		+ Check tolerance	40.0
SETTING		+ cm3/1000s.	: +- 19.0
Rated speed rpm	: 500	+	
Pressure hPa rack travel mm	: 600 : 8.30	İ	
Tolerance mm	: +- 0.05	LOW IDLE	
Rated speed rpm	: 500	Rated speed rpm	: 300
Pressure hPa rack travel mm	: – : 7.10	† Rack travel in m	n: 4.40
Tolerance mm	: +- 0.20	+ Tolerance mm	": + 0.10
		+ Del. quantity	27.0
MEASUREMENT		+ cm3/1000 strokes + Tolerance	: 27.0
Rated speed rpm	: 500	- cm3/1000 strokes - Check tolerance	: +- 3.0
Pressure hPa	: 350	+ check toterance + cm3/1000s.	: +- 6.0
rack travel mm	: 7.50	Spreed	
Tolerance mm	: + 0.20	+ Tolerance	. 9.0
Pressure hPa	: 430	+ cm3/1000 strokes + Check tolerance	: 8.0
rack travel mm	: 8.00	+ cm3/1000s.	: 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.10.97 Test oil : ISO 4113

Combination No. : 0 402 746 603

Injection pump

Pump designation : PES6P120A320RS7359

EP type number : 0 412 726 925

Governor

Governer design. : RQ300/1050PA999-7

Governer no. : 0 421 801 799

Cust. part No. : CCEP 5153 66-224

Customer-spec. information

Customer : RENAULT V.I.

Motor : MIHRO62045 A41 Power KW : 188.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

G10

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.70 Tolerance mm : + 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 20.25 Tolerance mm : +- 0.75

Firing order : 1-5-3-6-2-

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

Start of delivery mark

*NW after s.o.d. : -0.50

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm: 12.40

Tolerance mm : +- 0.05

BASIC SETTING

Rated speed rpm : 600	+
Tolerance mm : + 0.05	Rated speed rpm : 594
Total arte issu	+ guide steeve + travel mm : 5.11
Del. quantity	Tolerance mm : +- 0.10
cm3/1000 strokes : 197.0	Rated speed rpm : 720
Tolerance -	guide sleeve
cm3/1000 strokes : +- 1.0	travel mm : 6.00 Tolerance mm : + 0.10
Check tolerance	}
cm3/1000s. : +- 4.0	+ Rated speed rpm : 1380 + guide sleeve
Spreed	travel mm : 11.50
Tolomonoo	Tolerance mm : +- 0.50
Tolerance - cm3/1000 strokes : 5.0 -	
	GUIDE SLEEVE POSITION
Check tolerance - cm3/1030s. : 9.0	
	control lever
•	+ position degree : 109 + Rated speed rpm : 800
Rated speed rpm : 275	+ Rated speed rpm : 800 -
•	Rack travel in mm : 20.00
Rack travel in mm: -6.60 Tolerance mm: + 0.10	Tolerance mm : +- 0.80
Del. quantity	
cm3/1000 strokes : 38.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance - cm3/1000 strokes : +- 2.0 -	T Rated speed rpm : 600
Check tolerance	Aneroid pressure
cm3/1000s. : +- 5.0 Spreed	├ hPa : 1000 ├ Del. quantity
Tolerance -	- cm3/1000 strokes : 197.0
cm3/1090 strokes : 3.0	Tolerance
Check tolerance - cm3/1000s. : 12.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance
-	cm3/1000s. : +- 4.0
(D) SETTING OF INTECTION DUMP	+ Spreed + Tolerance
(B) SETTING OF INJECTION PUMP	cm3/1000 strokes : 5.0
•	Check tolerance
GUIDE SLEEVE TRAVEL	t cm3/1000s. : 9.0
	+
Rated speed rpm : 1145	CONTROL LEVER
guide sleeve - travel mm : 6.55 -	+ CONTROL LEVER
Tolerance mm : + 0.15	control Lever
Rated speed rpm : 275	position degree : 276.0 tolerance degree : +- 4.0
guide sleeve -	+
travel mm : 1.75	RATED SPEED
Tolerance mm : + 0.20	rack travel mm : -1.00 Rated speed rpm : 1120
Rated speed rpm : 1050	Tolerance 1/min : +- 15
guide sleeve - travel mm : 6.00 -	† ├ rack travel mm : -8.40
Tolerance mm : + 0.10	Rated speed rpm : 1250

Tolerance 1/min : + 5 rack travel mm : -11.90 Tolerance mm: +-0.50Rated speed rpm : 1375 LOW IDLE control lever position degree : 254.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 175 CRT mm min. : < -4.70Testina: Rated speed rpm : 275 rack travel mm : -6.60Tolerance mm : +0.10rack travel mm : -10.40 Rated speed rpm : 465 Tolerance 1/min : + 20 TORQUE CONTROL Rated speed rpm : 600 Tolerance am : **←** 0.05 Rated speed rpm : 1050 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING 500 Rated speed rpm : Pressure hPa : 1000 Rated speed rpm : 500 Pressure hPa rack travel mm : -1.75 Tolerance mm : \leftarrow 0.20 MEASUREMENT Rated speed rpm : 500

220

rack travel mm : -0.85 Tolerance mm : + 0.15 Pressure hPa : 160 rack travel mm : -1.25 Pressure hPa Tolerance mm : +- 0.05 Start interlock Rated speed rpm : > 100 Rated speed rpm : < 195 Check speed 1/min : > 80 Check speed 1/min : < 215 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1000 Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 198.0 Tolerance cm3/1000 strokes : \leftarrow 3.0 Check tolerance cm3/100Gs. : +- 6.0 Aneroid pressure Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 153.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 150.0 Tolerance cm3/1000 strokes : +- 15.0Check tolerance cm3/1000s. : + 19.0

LOW IDLE

Pressure hPa :

Rated speed rpm	:	275
Rack travel in mm Tolerance mm Del. quantity	: : +	-6.60 - 0.10
cm3/1000 strokes Tolerance	:	38.0
cm3/1000 strokes Check tolerance	: +	- 2.0
cm3/1 00 08. Spreed	: +	- 5.0
Tolerance cm3/1000 strokes Check tolerance	:	8.0
cm3/1000s.	:	12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.10.97 : ISO 4113

Combination No. : 0 402 746 995

Injection pump

Pump designation : PES6P12OA32ORS7343

EP type number : 0 412 726 915

Governor

Governer design. : RQV300...1000PA1160K

Governer no. : 0 421 815 420

Cust. part No. : CCEP 5144A 66-232

Customer-spec. information

Customer : RENAULT V.I.

Motor

: MIDR 062356 A/41

Power KW

: 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar

: **←** 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 4.50 Tolerance mm : + 0.05

Check

tolerance ram : - 0.10

Rack travel in mm : 11.00

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

*NW after s.o.d. : -0.40 Tolerance : +- 0.50

Tolerance

Check

tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

travel

11.00

Difference ° CS : 2.25

	† Tolerance mm : +- 0.25
Rack travel in mm : 12.80 Tolerance mm : + 0.05	Rated speed rpm : 823 guide sleeve
	+ travel mm : 5.92
BASIC SETTING	Tolerance mm : +- 0.25
	Rated speed rpm : 405
Rated speed rpm : 1000	guide sleeve travel mm : 2.43
Del. quantity	+ Tolerance mm : +- 0.25
cm3/1000 strokes : 350.0	Rated speed rpm : 455
Tolerance	guide sleeve
cm3/1000 strokes : + 1.0	travel mm : 2.98
	+ Tolerance mm : + 0.25
Check tolerance	+
$cm3/1000s.$: \leftarrow 4.0	Rated speed rpm : 550
	+ guide sleeve
Spread	+ travel mm : 3.65
	+ Tolerance mm : +- 0.25
Tolerance	1//0
cm3/1000 strokes : 5.0	Rated speed rpm : 1440
Check tolerance	+ guide sleeve + travel mm : 13.50
cm3/1000s. : 9.0	Tolerance mm : +- 0.50
. 7.0	Toger directions:
Rated speed rpm : 300	GUIDE SLEEVE POSITION
	+
Rack travel in mm : -7.60	control lever
Tolerance mm : + 0.10	position degree : - 1
Tolerance mm : + 0.10 Del. quantity	
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0	position degree : - 1 Rated speed rpm : 1300
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0	position degree : - 1 Rated speed rpm : 1300
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.69 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.69 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : +- 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : +- 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1103	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : +- 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1103 guide sleeve	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.69 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1103 guide sleeve travel mm : 8.70	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : +- 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1103 guide sleeve	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.69 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1103 guide sleeve travel mm : 8.70 Tolerance mm : + 0.25	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.69 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1103 guide sleeve travel mm : 8.70 Tolerance mm : + 0.25	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.69 Tolerance mm : + 1.30 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance

control lever position degree tolerance degree	: 117.0 : + 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: −1.00 : 1100 : ← 5
rack travel mm Rated speed rpm Tolerance 1/min	: −8.80 : 1210 : ← 15
rack travel mm Tolerance mm Rated speed rpm	: −12.30 : ← 0.50 : 1300
LOW IDLE	
control lever position degree tolerance degree	: 72.0 : ← 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : -7.60 : + 0.10
Rated speed rpm	: 200
CRT mm max.	: < -6.60
Rated speed rpm	: 390
TORQUE CONTROL Rated speed rpm	: 1000
Rated speed rpm rack travel mm Tolerance mm	: 600 : −0.45 : ← 0.15
Rated speed rpm rack travel mm Tolerance mm	: 800 : 0.10 : + 0.15
Rated speed rpm rack travel mm Tolerance mm	: 350 : −1.70 : ← 0.30

ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 1000 : 1200
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1000 : -3.90 : +- 0.30
MEASUREMENT	
Rated speed rpm	: 1000
Pressure hPa rack travel mm Tolerance mm	: 320 : −2.80 : ← 0.15
Pressure nPa rack travel mm Tolerance mm	: 520 : -1.70 : +- 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 225
Check speed 1/min Check	: > 80
speed 1/min	: < 245
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1200 : 600
cm3/1000 strokes Tolerance	: 381.0
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s.	: +- 6.0
Aneroid pressure	
hPa Rated speed rpm	: – : 500
Del. quantity cm3/1000 strokes	: 245.0

Tolerance cm3/1000 strokes : \leftarrow 1.0 Check tolerance cm3/1000s.: +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.25
Tolerance mm : + 0.75 Del. quantity cm3/1000 strokes : 185.0 Toterance cm3/1000 strokes : + 15.0Check tolerance : +- 19.0 cm3/1000s.LOW IDLE Rated speed rpm : 300 Rack travel in mm: -7.60 Tolerance mm : \leftarrow 0.10 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : +- 1.5 Check tolerance : +- 5.0 cm3/1000s.Spreed Tolerance 8.0 cm3/1000 strokes : Check tolerance 12.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.10.97 Test oil : ISO 4113

Combination No. : 0 402 846 063

Injection pump

Pump designation : PE6P120A320RS8024-1

EP type number : 0 412 826 029

Covernor

Governer design. : RQV250...1100PA1072

: -5K

Governer no.

: 0 421 815 977

Cust. part No. : 477952-PO5 v. 11.95

Customer-spec. information

Customer : VOLVO-TRUCK

Notor

: TD74 EU

Power KW

: 210.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

: 40

Tolerance "C : \leftarrow 2.0

Overflow valve : 2 417 413 089

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

har

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

x length mm : 600

2.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60

: +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm: 7.60
Tolerance mm: + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.60

Tolerance mm : \leftarrow 0.05

Del. quantity

cm3/1000 strokes : 211.0

G18

Tolerance cm3/1000 strokes : +- 1.0	travel mm : 2.97 Tolerance mm : +- 0.25
Check tolerance cm3/1000s. : +- 4.0	+ Rated speed rpm : 390
Spreed	guide sleeve + travel mm : 3.22 + Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : 8.0	+ Rated speed rpm : 1390
Check tolerance : 11.0	travel mm : 13.50 Tolerance mm : +- 0.50
	+ GUIDE SLEEVE POSITION
Rated speed rpm : 300	1
Rack travel in mm: 4.80 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 23.0	control lever position degree : - 1 Rated speed rpm : 1290
Tolerance cm3/1000 strokes : +- 2.5 Check tolerance	+ Rack travel in mm : 7.50 + Tolerance mm : + 2.50
cm3/1000s. : +- 5.0 Spreed Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP 3
cm3/1000 strokes : 5.0 Check tolerance	Rated speed rpm : 1100 Aneroid pressure
cm3/1000s. : 8.0	+ hPa : 1500 + Del. quantity
(B) SETTING OF INJECTION PUMP	+ cm3/1000 strokes : 211.0 + Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : +- 1.0 + Check tolerance
GUIDE SLEEVE TRAVEL	+ cm3/1000s. : +- 4.0 + Spreed
Rated speed rpm : 1176 guide sleeve	+ Tolerance + cm3/1000 strokes : 8.0 + Check tolerance
travel mm : 10.15 Tolerance mm : +- 0.25	cm3/1000s. : 11.0
Rated speed rpm : 250 guide sleeve	CONTROL LEVER
travel mm : 1.33 Tolerance mm : + 0.25	control lever position degree : 68.0
Rated speed rpm : 733 guide sleeve	<pre>position degree : 68.0 tolerance degree : +- 4.0 </pre>
travel mm : 5.39 Tolerance mm : + 0.25	control lever position degree : 120.0
Rated speed rpm : 307 guide sleeve	tolerance degree : +- 4.0 RATED SPEED
travel mm : 2.29 Tolerance mm : +- 0.25	+ rack travel mm : 12.60 + Rated speed rpm : 1135
Rated speed rpm : 357	+ Tolerance 1/min : +- 5 +

rack travel mm : 4.00 Rated speed rpm : 1230 Tolerance 1/min : + 15 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1320 LOW IDLE control lever position degree : 72.0 tolerance degree : +- 4.0 control lever position degree : tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 200 CRT mm min. : > 6.70 Testing: Rated speed rpm : 300 rack travel mm : 4.80 Tolerance mm : + 0.10 Rated speed rpm : 375 TORQUE CONTROL Rated speed rpm : 1100 rack travel mm : 13.60 Tolerance mm : + 0.05 Rated speed rpm : 650 13.10 rack travel mm : : +- 0.10 Tolerance mm Rated speed rpm : 300 rack travel mm : 11.50 Tolerance mm : + 0.30 ANEROID/ALTITUDE COMPENSATOR TEST SETTING

Tolerance mm : +- 0.10 Rated speed rpm : 1100 Pressure hPa : rack travel mm : 7.75 : +- 0.10 Tolerance mm **MEASUREMENT** Rated speed rpm : 1100 Pressure hPa : 885 rack travel mm : 5.10 : +- C.20 Tolerance mm Pressure hPa : 190 rack travel mm : 0.25 Tolerance mm : +- 0.05 FUEL DELIVERY CHARACTERISTICS Aneroid pressure 1500 hPa Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 248.0 Tolerance cm3/1000 strokes : +- 2.5Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000 st. Check tolerance cm3/1000 strokes : 10.014.0 Aneroid pressure hPa Rated speed rpm : 650 Del. quantity cm3/1000 strokes: 115.0 Tolerance

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.80

cm3/1000 strokes : +- 1.0

cm3/1000s. : +- 4.0

Check tolerance

G20

Rated speed rpm : 1100

Pressure hPa : 1500 rack travel mm : 13.60

Tolerance mm	: +-	0.10
Del. quantity cm3/1000 strokes Tolerance	:	23.0
cm3/1000 strokes Check tolerance	: +-	2.5
cm3/1000s.	: +-	5.0
Tolerance cm3/1000 strokes	:	5.0
Check tolerance cm3/1000s.	:	8.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.10.97 Test oil : ISO 4113

Combination No. : 0 402 946 019

Injection pump

Pump designation : PES6P120A720RS8041 EP type number : 0 412 926 027

Governor

Governer design. : RQV250...950PA1253

: -1

Governer no. : 0 421 814 167

Cust. part No. : 1383216

Customer—spec. information
Customer : SCANIA
Motor : DSC 11.74

TEST BENCH REQUIREMENTS

Inlet Line : EHAB

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.40 Tolerance mm : + 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : \leftarrow 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : \leftarrow 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

1	
Rack travel in mm: 10.35	Rated speed rpm : 420
Tolerance mm : + 0.05	guide sleeve
	travel mm : 3.37
Del. quantity +	Tolerance mm : + 0.25
cm3/1000 strokes : 227.0 +	
T-1	Rated speed rpm : 1390
Tolerance + 1.0 + 1.0	guide sleeve
CM3/1000 Strokes: +- 1.0	travel mm : 11.50 Tolerance mm : +- 0.50
Check tolerance	Tolerance mm : +- 0.50
cm3/1000s. : +- 7.0	
	GUIDE SLEEVE POSITION
Spreed	
+	
Tolerance	control lever
cm3/1000 strokes : 8.0 +	position degree : - 1
+	Rated speed rpm : 1250
Check tolerance	Dool toward to make a 27
cm3/1000s. : 14.0	Rack travel in mm : 9.35 Tolerance mm : +- 1.30
	Toterance mm : += 1.50
Rated speed rpm : 250	FULL LOAD DELIVERY AT FULL LOAD STOP
_ +	
Rack travel in mm: 5.60	Rated speed rpm : 700
Tolerance mm : + 0.10 +	Aneroid pressure
Del. quantity +	hPa : 1500
cm3/1000 strokes : 16.0 +	Del. quantity
Tolerance	cm3/1000 strokes : 227.0
cm3/1000 strokes : + 3.0 +	Tolerance
Check tolerance	cm3/1000 strokes : + 1.0
cm3/1000s. : +- 6.0	Check tolerance
Spreed	cm3/10Q0s. : +- 7.0
Tolerance cm3/1000 strokes : 5.0	Spreed
	Tolerance cm3/1000 strokes : 8.0
Check tolerance + cm3/1000s. : 8.0 +	cm3/1000 strokes : 8.0 Check tolerance
cm3/100US. : 8.0 +	cm3/1000s. : 14.0
\perp	(1137 10005: 14.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	
+	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
TOTAL SELEVE HAVEE	position degree : 58.0
Rated speed rpm : 1005	tolerance degree : + 4.0
guide sleeve	toter affect degree . 14 4.0
travel mm : 7.25	control lever
Tolerance mm : + 0.15	position degree : 111.0
1	tolerance degree : + 4.0
Rated speed rpm : 250	
guide sleeve	RATED SPEED
travel mm : 1.31	rack travel mm : 9.35
Tolerance mm : + 0.20	Rated speed rpm : 995
+	Tolerance 1/min : + 5
Rated speed rpm : 673	Check
guide sleeve +	speed 1/min : +- 10
travel mm : 4.96 +	·
Tolerance mm : $+$ 0.25	rack travel mm : 4.00
·	

G23

Rated speed rpm Tolerance 1/min Check	: +- 15
speed 1/min	: +- 20
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 1250
LOW IDLE	
control lever position degree tolerance degree	: 66.0 : + 4.0
control lever position degree tolerance degree	: 12.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 150
CRT mm min.	: > 7.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 250 : 5.60 : + 0.10
Rated speed rpm	: 300
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 700 : 10.35 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 950 : 10.35 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 10.35 : ← 0.05

Pressure hPa rack travel mm Tolerance mm	: - : 8.20 : +- 0.20	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 260 : 8.80 : +- 0.15	
Pressure hPa rack travel mm Tolerance mm	: 430 : 9.80 : +- 0.05	
Start interlock		
Rated speed rpm Rated speed rpm	: > 100 : < 170	
Check speed 1/min	: > 80	
Check speed 1/min	: < 190	
FUEL DELIVERY CHA	RACTERISTICS	
Aneroid pressure hPa Rated speed rpm	: 1500	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1500 : 950	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1500 : 950 : 216.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 1500 : 950 : 216.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure	: 1500 : 950 : 216.0 : + 4.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm	: 1500 : 950 : 216.0 : + 4.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1500 : 950 : 216.0 : + 4.0 : + 6.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1500 : 950 : 216.0 : +- 4.0 : +- 6.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 1500 : 950 : 216.0 : + 4.0 : + 6.0 : 500 : 153.0	

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : +- 0.50

Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 180.0

Tolerance cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : \leftarrow 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm: 5.60 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes : + 3.0

Check tolerance cm3/1000s. : + 6.0

Spreed

Tolerance

cm3/1000 strokes : 5.3

Check tolerance

: 8.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 20.10.97 Edition Test oil : ISO 4113

Combination No. : 0 402 945 023

Injection pump

Pump designation : PES6P120A320RS8038 EP type number : 0 412 926 025

Governor

Governer design. : RQ250/1000PA1265-2 Governer no. : 0 421 801 808

Cust. part No. : 1385102

Customer-spec. information Customer : SCANIA Motor : DSC 9.1 : DSC 9.15 Motor

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

: 40 temp. °C temp. $^{\circ}$ C : 40 Tolerance $^{\circ}$ C : + 2.0

Overflow valve : 2 417 413 G82

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity min. l/h : 110 Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

: 251.5 bar : 251.5 Tolerance bar : + 1.5 bar

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 4.00Tolerance mm : \div 0.05 Check tolerance mm : \leftarrow 0.10

Rack travel in mm : 20.50 Tolerance mm : - 0.20

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : \leftarrow 0.30

Check

tolerance $^{\circ}NW$: \leftarrow 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

		1
Rack travel in mm Tolerance mm	12.90 : ← 0.05	Rated speed rpm : 360 guide sleeve
		+ travel mm : 3.50
Del. quantity cm3/1000 strokes	: 300.0	+ Tolerance mm : + 0.10 + +
		+ Rated speed rpm : 490
Tolerance		+ guide sleeve
cm3/1000 strokes	: + 1.0	+ travel mm : 4.50
		+ Tolerance mm : +- 0.10
Check tolerance	_	†
cm3/1000s.	: 9.0	+ Rated speed rpm : 1134
		† gride sleeve
Spreed		+ travel mm : 5.50
		+ Tolerance mm : +- 0.10
Tolerance		†
cm3/1000 strokes	: 8.0	+ Rated speed rpm : 1600
		+ guide sleeve
Check tolerance		+ travel nm : 11.50
cm3/1000s.	: 12.0	+ Tolerance mm : +- 0.50
		†
		CHINE CLEENE DOCTTION
Data al an III	252	GUIDE SLEEVE POSITION
Rated speed rom	: 250	†
Dook tooks to me	7 40	+ control lever
Rack travel in mm		
Tolerance mm	: + 0.10	1 ,
Del. quantity		Rated speed rpm : 600
cm3/1000 strokes	: 40.0	Pack thought in many 14 40
Tolerance		+ Rack travel in mm : 16.40
cm3/1000 strokes	: +- 3.0	Tolerance mm : + 0.80
Check tolerance		<u> </u>
cm3/1000s.	: +- 6.0	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed Tolerance		T FOLL LOAD DELIVERY AT FOLL LOAD STOP
cm3/1000 strokes	: 4.0	Rated speed rpm : 600
Check tolerance	. 4.0	+ Aneroid pressure
cm3/1000s.	: 8.0	+ hPa : 1500
CIID7 10003.	. 0.0	Del. quantity
		+ cm3/1000 strokes : 300.0
(B) SETTING OF IN	HECTION PUMP	+ Tolerance
WITH GOVERNOR	ACCUTOM LOU	+ cm3/1000 strokes : +- 1.0
MITTI GOVERNOR		Check tolerance
		+ cm3/1000s. : +- 9.0
GUIDE SLEEVE TRAV	/EI	+ Spreed
GOIDE OFFERE INVA	, CC	+ Tolerance
		cm3/1000 strokes : 8.0
Rated speed rom	• 1060	,
Rated speed rpm	: 1060	+ Check tolerance
guide sleeve		+ Check tolerance + cm3/1000s : 12.0
guide sleeve travel mm	: 4.82	+ Check tolerance + cm3/1000s. : 12.0
guide sleeve		
guide sleeve travel mm Tolerance mm	: 4.82 : ← 0.15	
guide sleeve travel mm Tolerance mm Rated speed rpm	: 4.82 : + 0.15	- cm3/1000s. : 12.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 4.82 : + 0.15 : 250	
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 4.82 : + 0.15 : 250 : 1.44	cm3/1000s. : 12.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 4.82 : + 0.15 : 250	cm3/1000s. : 12.0 CONTROL LEVER control lever
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 4.82 : + 0.15 : 250 : 1.44 : + 0.20	cm3/1000s. : 12.0 CONTROL LEVER control lever position degree : 47.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	: 4.82 : + 0.15 : 250 : 1.44	cm3/1000s. : 12.0 CONTROL LEVER control lever position degree : 47.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	 : 4.82 : + 0.15 : 250 : 1.44 : + 0.20 : 970 	cm3/1000s. : 12.0 CONTROL LEVER control lever position degree : 47.0 tolerance degree : + 4.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	: 4.82 : + 0.15 : 250 : 1.44 : + 0.20	cm3/1000s. : 12.0 CONTROL LEVER control lever position degree : 47.0

tolerance degree : + 4.0 †	
RATED SPEED rack travel mm : 11.90 Rated speed rpm : 1045 Tolerance 1/min : + 5 Check speed 1/min : + 10	ANEROID/ALTITUDE COMPENSATOR TEST SETTING
rack travel mm : 4.00 Rated speed rpm : 1240 Tolerance 1/min : + 15 Check	Rated speed rpm : 500 Pressure hPa : 1500 rack travel mm : 12.90 Tolerance mm : + 0.05
speed 1/min : + 20 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1350	Rated speed rpm : 500 Pressure hPa : - rack travel mm : 9.80 Tolerance mm : + 0.20
‡	MEASUREMENT
	Rated speed rpm : 500
LOW IDLE	Pressure hPa : 325 rack travel mm : 10.55 Tolerance mm : + 0.15
control lever position degree : 87.0 tolerance degree : + 4.0	Pressure hPa : 760 rack travel mm : 12.15 Tolerance mm : + 0.05
control lever position degree : 25.0 + tolerance degree : + 4.0 +	Start interlock
Setting point w/out bumper spring	Rated speed rpm : < 190 Rated speed rpm : > 150
Rated speed rpm : 150	Check
CRT mm min. :> 9.50	speed 1/min : < 210 Check
Testing:	speed 1/min : > 130
Rated speed rpm : 250 rack travel mm : 7.60 Tolerance mm : + 0.10	FUEL DELIVERY CHARACTERISTICS
rack travel mm : 2.00 Rated speed rpm : 355 Tolerance 1/min : + 20	Aneroid pressure hPa : 1500 Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 295.0
TORQUE CONTROL Rated speed rpm : 600 rack travel mm : 12.90 Tolerance mm : + 0.05	Tolerance cm3/1000 strokes : 293.0 Tolerance cm3/1000 strokes : + 4.0 Check tolerance cm3/1000S. : + 9.0
Rated speed rpm : 1000 rack travel mm : 12.90 Tolerance mm : + 0.10	Aneroid pressure hPa : - Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 172.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : + 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : +0.50

Del. quantity

cm3/1000 strokes : 265.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance

cm3/1000s. : + 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 7.60 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 40.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : + 6.0

Spreed

Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 20.10.97 : ISO 4113

Combination No. : 0 402 946 030A

Injection pump

Pump designation : PES6P12GA72ORS8G49 EP type number : 0 412 926 031

Governor

Governer design. : RQ750PA1299 Governer no. : 0 421 801 810

Cust. part No. : 1397783 Variante A

Customer-spec. information Customer : SCANIA Motor : DSC1158A

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

: 40 : +- 2.0 temp. °C Tolerance °C

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Tolerance l/h: + 20.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

: 251.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

: 3.65 : +- 0.05 Prestroke mm Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm : 14.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery blocking

: +- 0.10Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in man Tolerance man	n: 13.15 : +- 0.05	Rated speed rpm guide sleeve travel mm	: 795 : 10.00
N-1		† Tolerance mm	: ← 0.25
Del. quantity cm3/1000 strokes	: 338.0	+ Rated speed rpm + guide sleeve	: 850
Tolerance cm3/1000 strokes	: + 1.0	travel mm Tolerance mm	: 11.50 : + 0.50
Check tolerance cm3/1000s.	: +- 4.0	FULL LOAD DELIVER	Y AT FULL LOAD STOP
Spreed		Rated speed rpm	: 850
Tolerance cm3/1000 strokes	: 8.0	+ Aneroid pressure + hPa + Del. quantity	: 1500
Check tolerance		+ cm3/1000 strokes + Tolerance	: 338.0
cm3/1000s.	: 12.0	+ cm3/1000 strokes + Check tolerance	: +- 1.0
		+ cm3/1000s. + Spreed	: +- 4.0
Rack travel in mm			: 8.0
Tolerance mm Del. quantity	: + 0.20	+ Check tolerance + cm3/1000s.	: 12.0
cm3/1000 strokes Tolerance		+	
cm3/1000 strokes Check tolerance		CONTROL LEVER	
cm3/1000s. Spreed	: 6.0	+ control lever	
Tolerance		position degree	: 28.0
cm3/1000 strokes Check tolerance	: 5.0	tolerance degree	: +- 4.0
cm3/1000s.	: 9.0	control lever position degree	: 89.0
		tolerance degree	
(B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP	‡	
		ASSEMBLY GOVERNOR	SETTING
GUIDE SLEEVE TRAV	/EL	Rated speed rpm	
Rated speed rpm	: 758	Tolerance 1/min rack travel mm	: + 2 : 12.10
guide sleeve travel mm	: 4.98	† Tolerance 1/min	: +- 4
Tolerance mm	: + 0.15	rack travel mm	4.00
Rated speed rpm guide sleeve	: 480	rack travel mm Tolerance mm	: 0.50 : +- 0.50
travel mm Tolerance mm	: −10.85 : + 0.25	Rated speed rpm	
Rated speed rpm guide steeve	: 840	rack travel mm	: 12.10
travel mm Tolerance mm	: 18.50 : +- 0.25	rack travel mm	: 4.00
TOTEL GLICE (MI)	• • ••••	T rack travel mm	: 0.50

Tolerance mm	: + 0.50	+
Rated speed rpm rack travel mm	: 752 : 12.10	+++
Rated speed rpm Tolerance 1/min rack travel mm	: 780 : +- 4 : 4.00	1+++
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 850	
Rated speed rom rack travel mm	: 753 : 12.10	++
Rated speed rpm Tolerance 1/min rack travel mm	: 781 : + 4 : 4.00	+++
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 850	
Rated speed rpm rack travel mm	: 754 : 12.10	+++
Rated speed rpm Tolerance 1/min rack travel mm	: 782 : + 4 : 4.00	1+++
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 850	
Rated speed rpm rack travel mm	: 755 : 12.10	
Rated speed rpm Tolerance 1/min rack travel mm	: 783 : + 4 : 4.00	
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 850	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 850 - : 13.15 - : + 0.05	++++

COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1500 : 13.1 : +- 0.0
rack travel mm	: 13.1
Tolerance mm	: +- 0.0
Rated speed rpm	: 500
Pressure hPa	: -
rack travel mm	7.8
Tolerance mm	: +- 0.2
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa	: 230
rack travel mm	: 8.4
Tolerance mm	: +- 0.2
Pressure hPa	: 580
rack travel mm Tolerance mm	: 10.4 : + 0.0
FUEL DELIVERY CHA	RACTERISTI
Anonoid procesure	
Aneroid pressure hPa	
Rated speed rpm	· : 500
Del. quantity	·
cm3/1000 strokes	: 230.
Tolerance cm3/1000 strokes	: + 1.
Check tolerance	• ' '•
CHECK COLCI MILCO	: +- 4.
cm3/1000s.	
	IVERY
cm3/1000s. STARTING FUEL DEL Rated speed rpm	: 100
cm3/1000s. STARTING FUEL DEL	
cm3/1000s. STARTING FUEL DEL Rated speed rpm	: 100
cm3/1000s. STARTING FUEL DEL Rated speed rpm	: 100

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 28,10,97 : ISO 4113

Combination No.

: 9 400 087 438

Injection pump

Pump designation : PE6P110A320RS3108X EP type number : 0 411 816 730

Governor

Governer design. : RQV250...1100PA589

: -3

Governer no.

: 9 420 080 288

Cust. part No. :

Customer-spec. information

Customer : VOLVO-TRUCK

Motor

: THD100 ED

Power KW

: 203.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

H₀6

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

: 3.05 Prestroke mm

: +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.15

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 166.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.

: +- 4.0

Spreed

m3/1000 strokes	: 4.0	control lever position degree : - 1
eck tolerance 3/1000s.	: 7.5	Rated speed rpm : 1175
57 10000°	• (**)	Rack travel in mm: 16.50
		Tolerance mm : +- 1.30
ted speed rpm	: 250	<u> </u>
ck travel in mm	• 5 10	FULL LOAD DELIVERY AT FULL LOAD S
olerance mm		Rated speed rpm : 700
el. quantity		+ Aneroid pressure
3/1000 strokes	: 32.0	hPa : 900
lerance	25	+ Del. quantity
3/1000 strokes eck tolerance	: +- 2.5	+ cm3/1000 strokes : 166.0
eck tolerance 3/1000s.	: +- 5.0	+ Tolerance + cm3/1000 strokes : +- 1.0
preed	· · J.U	+ Check tolerance
lerance		+ cm3/1000s. : +- 4.0
3/1000 strokes	: 4.5	Spreed
eck tolerance		Tolerance
3/1000s.	: 7.5	+ cm3/1000 strokes : 4.0
		+ Check tolerance
) SETTING OF INJ	COTTON NUMBER	+ cm3/1000s. : 7.5
UIDE SLEEVE TRAVE	·	CONTROL LEVER
		control lever
ted speed rpm	: 950	position degree : 65.0
ated speed rpm uide sleeve	: 950	· · · · · · · · · · · · · · · · · · ·
ated speed rpm uide sleeve ravel mm	: 950 : 6.50	position degree : 65.0 tolerance degree : +- 4.0
ated speed rpm uide sleeve ravel mm olerance mm	: 950	position degree : 65.0 tolerance degree : +- 4.0 control lever
ated speed rpm uide sleeve ravel mm olerance mm	: 950 : 6.50	position degree : 65.0 tolerance degree : +- 4.0 control lever position degree : 119.0
ated speed rpm uide sleeve ravel mm olerance mm	: 950 : 6.50 : ← 0.20 : 250	position degree : 65.0 tolerance degree : + 4.0 control lever position degree : 119.0 tolerance degree : + 4.0
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control lever position degree : 12.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm 100 : > 6.70 CRT man min. Testing: Rated speed rpm 250 5.10 rack travel mm : + 0.10Tolerance mm 338 Rated speed rpm : TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 12.15 Tolerance mm : ← 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING 500 Rated speed rpm : Pressure hPa 900 rack travel mm 12.15 Tolerance mm : +- 0.05 Rated speed rpm 500 Pressure hPa : **MEASUREMENT** Rated speed rpm 500 ; 700 Pressure hPa 2.50 rack travel mm : **←** 0.10 Tolerance mm Pressure hPa 280 : rack travel mm 0.25 : + 0.05 Tolerance mm FUEL DELIVERY CHARACTERISTICS Aneroid pressure

700

Del. quantity cm3/1000 strokes : 113.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. : +-4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50 : +- 0.50 Tolerance mm Del. quantity cm3/1000 strokes : 170.0Tolerance cm3/1000 strokes : +- 10.0Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 250 Rack travel in mm : 5.10 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : +-2.5 Check tolerance cm3/1000s.: +-5.0 Spreed Tolerance cm3/1000 strokes : 4.5 Check tolerance cm3/1000s. 7.5

End of test specification sheet

80H

Rated speed rpm :

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.10.97 : ISO 4113 Test oil

Combination No. : 0 400 074 870

Injection pump

Pump designation : PES4M55C32URS193 EP type number : 0 410 054 931

Governor

Governer design. : RSF400/2000M91 Governer no. : 0 420 021 296

Cust. part No. :

Customer-spec. information Customer : SSANGYONG : 0M661 D23 LA Motor

Power KW : 73.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

: 148.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values ____

BEGINNING OF DELIVERY

rest pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 1.75
Tolerance mm : + 0.05 Check tolerance mm : +- 0.10

Rack travel in mm: 21.00 Tolerance mm : +- 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 16.50 Tolerance : +- 0.20

Check

tolerance °NW : +- 0.30

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.60 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 56.1

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 1.5

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance cm3/1000s. : 3.0 SET IDLE CONTROL LEVER POSITION Rated speed rpm : 400 Rated speed rpm : 1000 Rack travel in mm: 5.40 Tolerance mm : + 0.10 CRT mm max. : 1.95 Del. quantity cm3/1000 strokes : 6.7 Tolerance LOW IDLE cm3/1000 strokes : +- 0.5Spreed Tolerance control lever cm3/1000 strokes : 1.0 position degree : 8.0 tolerance degree : +-2.0 (B) SETTING OF INJECTION PUMP Setting point w/out bumper spring WITH GOVERNOR Rated speed rpm : 400 rack travel mm : 5.40 IDLE STAGE SET IDLE AUXILIARY SPRING Rated speed rpm : Rack travel in mm : 5.50 rack travel mm : 3.90 Tolerance mm : + 0.10 Tolerance mm : \leftarrow 0.10 Load pick-up FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 200 Rated speed rpm : 1000 rack travel mm : 12.70 Ref. pressure ALDA / ADA hPa : 1700 Rated speed rpm : 1000 Del. quantity CRT mm max. : cm3/1000 strokes : 56.1 1.95 Tolerance rack travel mm : Rated speed rpm : cm3/1000 strokes : + 0.55.40 Check tolerance 400 cm3/1000s.: **←** 1.5 Spreed Tolerance cm3/1000 strokes : 2.5 TORQUE CONTROL Check tolerance cm3/1000s.3.0 Rated speed rpm : 1000 rack travel mm : 14.60 : +- 0.05 Tolerance mm RATED SPEED Rated speed rpm : 1700 13.85 rack travel mm : control lever Tolerance mm : \leftarrow 0.10 position degree : 50.0 Rated speed rpm : 2000 Rated speed rpm : 2300 rack travel mm : 13.30 : +- 0.10 rack travel mm : 8.00 Tolerance mm Tolerance mm : +- 0.20 Rated speed rpm : 1000 rack travel mm : 12.00 Tolerance mm : +- 0.10 Rated speed rpm : 2600 rack travel mm 0.50 : +- 0.60 Tolerance mm ADJUSTMENT TEST ADA/ALDA

SETTING		Del. quantity cm3/1000 strokes : 43.5
Rated speed rpm Ref. pressure	: 1000	Tolerance cm3/1000 strokes : + 0.5 Check tolerance
ALDA / ADA hPa	: 1500	+ cm3/1000s. : + 1.5
rack travel mm	: -0.40	Spreed
Tolerance mm	: 0.20	Tolerance
		+ cm3/1000 strokes : 2.5
MEASUREMENT		Check tolerance
Rated speed rpm	: 1000	t cm3/1000s. : 3.0
Ref. pressure	. 1000	Ref. pressure
ALDA / ADA hPa	: 1100	+ ALDA / ADA hPa : 1100
rack travel mm	: -2.60	+ Rated speed rpm : 1000
Tolerance mm	: +- 0.10	+ Del. quantity
D-6		cm3/1000 strokes : 43.5
Ref. pressure ALDA / ADA hPa	: 750	Tolerance
rack travel mm	: -4.40	+ cm3/1000 strokes : +- 0.5 + Check tolerance
Tolerance mm	: +- 0.20	- cm3/1090s. : +- 1.5
	0.20	+ Spreed
		+ Tolerance
		+ cm3/1000 strokes : 2.5
FUEL DELIVERY CHA	ARACTERISTICS	+ Check tolerance
Nof procesure		- cm3/1000s. : 3.0
Ref. pressure ALDA / ADA hPa	: 1700	I
Rated speed rpm		
Del. quantity		HIGH IDLE
cm3/1000 strokes	: 54.6	+
Tolerance		+ Ref. pressure
cm3/1000 strokes	: +- 0.8	+ ALDA / ADA hPa : 1700
Check tolerance	10	Rated speed rpm : 2300
cm3/1000s. Spreed	: + 1.8	track travel mm : 8.00 Tolerance mm : + 0.20
Tolerance		Del. quantity
cm3/1000 strokes	: 2.5	+ cm3/1000 strokes : 28.4
Check tolerance		† Tolerance
cm3/1000s.	: 3.0	+ cm3/1000 strokes : + 2.0
5 (+ Check tolerance
Ref. pressure	: 1700	+ cm3/1000s. : + 3.0
ALDA / ADA hPa Rated speed rpm		+ Spreed + Tolerance
Spreed	. 2000	+ cm3/1000 strokes : 2.5
Del. quantity		+ Check tolerance
cm3/1000 strokes	: 52.9	+ cm3/1000s. : 3.0
Tolerance	4.0	+
cm3/1000 strokes	: + 1.0	CTARTIAIC FUEL DEL TUERV
Check tolerance cm3/1000s.	: +- 2.0	+ STARTING FUEL DELIVERY
Spreed	. +- 2.0	Rated speed rpm : 100
Tolerance		rack travel mm : 21.60
cm3/1000 strokes	: 2.5	+ Tolerance mm : +- 1.50
Check tolerance		Del. quantity
cm3/1000S.	: 3.0	+ cm3/1000 strokes : 58.3
Def wassers		+ Tolerance
Ref. pressure ALDA / ADA hPa	: 1100	+ cm3/1000 strokes : +- 4.0 - Check tolerance
Rated speed rpm		+ cm3/1000s. : +- 5.0
atea speed i piii		1 0000,10000.

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s.

: 6.0

LOW IDLE

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 7.7

Check tolerance

cm3/1000s.

: + 2.3

Spreed

Check tolerance

cm3/1000s.

1.5

control lever

position degree : > 42.00

control lever

position degree : < 39.50

SETTING PNEUMATIC FAST IDLE (PLA)

(PLA) POSITION

control lever

8.0 position degree :

tolerance degree : + 2.0

Rated speed rpm : 450

Rack travel in mm : 7.80

Tolerance mm : + 0.80

Del. quantity

cm3/1000 strokes : 17.2

Tolerance

cm3/1000 strokes : + 3.5

Check tolerance

: +- 4.5 cm3/1000s.

: 450.0 Vacuum hPa

TESTING PNEUMATIC SHUTOFF DEVICE

400 Rated speed rpm :

Vacuum hPa : -450.0

H12

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 19.08.97 : ISO 4113

Combination No. : 0 400 074 872

Injection pump

Pump designation : PES4M55C32ORS192 EP type number : 0 410 054 932

Governor

Governer design. : RSF360/1900M90 Governer no. : 0 420 021 295

Cust. part No. :

Customer-spec. information Customer : MB-PKW

: OM601 D23 LA Motor

: 72.0 Power KW

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

: 148.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 1.75 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 21.00 Tolerance mm : +- 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 16.50 Tolerance : +- 0.20 Tolerance

Check

tolerance °NW : +- 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.65 Tolerance mm : \leftarrow 0.05

Del. quantity

cm3/1000 strokes : 64.1

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 1.5

Spreed

Tolerance + cm3/1000 strokes : 2.5	Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : 3.0	SET IDLE CONTROL LEVER POSITION
Rated speed rpm : 360	Rated speed rpm : 900
Rack travel in mm: 5.30 Tolerance mm: + 0.10	CRT mm max. : 1.85
Del. quantity + cm3/1000 strokes : 6.5 + Tolerance	LOW IDLE
cm3/1000 strokes : +- 0.5 Spreed Tolerance	<pre>control lever position degree : 8.0 tolerance degree : +- 2.0</pre>
cm3/1000 strokes : 1.0	Setting point w/out bumper spring
(B) SETTING OF INJECTION PUMP +	Rated speed rpm : 360 rack travel mm : 5.30
	SET IDLE AUXILIARY SPRING
IDLE STAGE	Rated speed rpm : 500 rack travel mm : 3.50 Tolerance mm : ±- 0.10
Rack travel in mm: 5.00 + Tolerance mm: + 0.10 +	Load pick-up
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 150 rack travel mm : > 11.90
Rated speed rpm : 900 + Ref. pressure +	Rated speed rpm : 900
ALDA / ADA hPa : 1900 + Del. quantity	CRT mm max. : 1.85
cm3/1000 strckes : 64.1 Tolerance + cm3/1000 strckes : + 0.5 Check tolerance +	rack travel mm : 5.30 Rated speed rpm : 360
cm3/1000s. : + 1.5 + Spreed + Tolerance +	TORQUE CONTROL
cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. : 3.0	Rated speed rpm : 900 rack travel mm : 14.65 Tolerance mm : +- 0.05
RATED SPEED +	Rated speed rpm : 1500 rack travel mm : 13.80 Tolerance mm : + 0.10
control lever position degree : 50.0	Rated speed rpm : 1900 rack travel mm : 13.30 Tolerance mm : + 0.15
Rated speed rpm : 2200 + rack travel mm : 9.35 + Tolerance mm : + 0.20 +	Rated speed rpm : 500 rack travel mm : 16.20 Tolerance mm : + 0.30
Rated speed rpm : 2700 + rack travel mm : 0.50 +	Rated speed rpm : 900

ADA/ALDA	Ref. pressure ALDA / ADA hPa Rated speed rom	: 1100 : 900	
	+ Del. quantity		
: 900	† Tolerance		
: 1650 : - 0.50	+ Check tolerance + cm3/1000S.	: +- 1.5	
: + 0.20	+ Spreed + Tolerance		
	+ cm3/1000 strokes + Check tolerance		
	+ cm3/1000s.	: 3.0	
	+ Ref. pressure	4000	
	+ Del. quantity		
• 750	· · · · · · · · · · · · · · · · · · ·	: 67.1	
: -5.45	cm3/1000 strokes		
: +- 0.20			
: 1900 : 1500 : 61.1 : + 0.8 : + 1.8 : 2.5 : 3.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 900 : 43.5 : +- 0.5 : +- 1.5 : 2.5	
. 3.0	HIGH IDLE		
: 1900 : 1900 : 58.6 : + 1.0 : + 2.0	Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	: 2200 : 9.35 : +- 0.20 : 38.9 : +- 2.0	
	: 900 : 1650 : -0.50 : + 0.20 : 900 : 1100 : -3.70 : + 0.10 : 750 : -5.45 : + 0.20 ARACTERISTICS : 1900 : 1500 : 61.1 : + 0.8 : + 1.8 : 2.5 : 3.0 : 1900 : 1900 : 58.6 : + 1.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Ref. pressure ALDA / ADA hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes check tolerance cm3/1000s. Ref. pressure ALDA / ADA hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Ref. pressure ALDA / ADA hPa Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000 strokes	Rated speed rpm : 900 Del. quantity cm3/1000 strokes : 43.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000 strokes : + 1.5 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000 strokes : 500 Del. quantity cm3/1000 strokes : 67.1 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 3.0 Ref. pressure ALDA / ADA hPa : 1100 Rated speed rpm : 900 Del. quantity cm3/1000 strokes : 43.5 Tolerance cm3/1000 strokes : 38.9 Tolerance cm3/1000 strokes : 43.5

Tolerance	
cm3/1000 strokes	: 2.5
Check tolerance	
cm3/1000s.	: 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
rack travel mm	: 21.60
Tolerance mm	: + 1.50
Del. quantity	
cm3/1000 strokes	: 65.8
Tolerance	
cm3/1000 strokes	: +- 4.0
Check tolerance	
cm3/1000s.	: +- 5.0
Spreed	
Tolerance	
cm3/1000 strokes	: 6.0
Check tolerance	
cm3/1000s.	: 6.0
LOW IDLE	
Rated speed rpm	: 360
rack travel mm	: 5.30
Tolerance nan	: → 0.10
Del. quantity	3.,0
cm3/1000 strokes	: 7.8
Check tolerance	
cm3/1000s.	: +- 2.3
Spreed	
Check tolerance	
cm3/1000s.	: 1.5
SETTING PNEUMATIC	FAST IDLE (PLA)
(PLA) POSITION	
control lever	
position degree tolerance degree	: 8.0
tolerance degree	: +- 2.0
SETTING/TESTING EL	LECTRONIC IDLE
REGULATION (ELR)	
Rated speed rpm	: 360
Rack travel in mm	
Tolerance mm	: +- 0.70
Cumpant A	. 1 00
Current A	: 1.80

Rack travel in mm: 0.50 Tolerance mm : + 0.50 Current short— Starting test Rated speed rpm : 100 Current A : 1.80 TESTING & SETTING RACK TRAVEL SENSOR POSITION Test with KDEP-P400 Voltage Volt : 1.636
Tolerance Volt : + 0.003 Check tolerance Volt : +- 0.001 ADJUSTMENT Rated speed rpm : 900 Ref. pressure ALDA / ADA hPa : 1900 Rack travel in mm Tolerance Volt : +- 0.030 Check tolerance Volt : +- 0.060 TESTING PNEUMATIC SHUTOFF DEVICE Rated speed rpm : 360 Vacuum hPa : -450.0

Rated speed rpm : 2700

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.10.97 Test oil : ISO 4113

Combination No. : 0 400 075 918

Injection pump

Pump designation : PES5M55C32ORS191 EP type number : 0 410 055 951

Governor

Governer design. : RSF335/2000M88 Governer no. : 0 420 021 293

Cust. part No. :

Customer—spec. information

Customer : DPICO

Motor : OM662-D29LA

Power KW : 88.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 148.5 Tolerance bar : ← 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 1.75
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-2-4-5-3

Phasing : 0-72-144-216-288

Start of delivery blocking

*NW after s.o.d. : 16.50 Tolerance : $\leftarrow 0.20$

Check

tolerance °NW : + 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.75 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 53.1

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : + 1.5

Spreed

Tolerance

cm3/1000 strokes : 2.5

H17

Check tolerance cm3/1000s.	: 3.0
Rated speed rpm	: 385
Rack travel in mon Tolerance mon	: 5.80 : ← 0.10
Del. quantity cm3/1000 strokes	: 8.5
Tolerance cm3/1000 strokes	: ← 0.5
Spreed Tolerance cm3/1090 strokes	: 1.0
(B) SETTING OF IN WITH GOVERNOR	NECTION PUMP
IDLE STAGE	
Rack travel in mm Tolerance mm	: 5.50 : ← 0.10
FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rated speed rpm Ref. pressure	: 1000
ALDA / ADA hPa	: 1600
Del. quantity cm3/1000 strokes	: 53.1
Tolerance cm3/1000 strokes	: ← 0.5
Check tolerance cm3/1000s.	: +- 1.5
Spreed Tolerance cm3/1000 strokes	: 2.5
Check tolerance	
cm3/1000s.	: 3.0
RATED SPEED	
control lever position degree	: 50.0
Rated speed rpm rack travel mm Tolerance mm	: 2250 : 8.75 : +- 0.20
Rated speed rpm rack travel mym Tolerance mym	: 2600 : 0.50 : +- 0.60

Rated speed rpm	: 1000
, ,	: 1.85
CRI IIII III II.	; 1.03
LOW IDLE	
control lever position degree	: 11.0
Setting point w/c Rated speed rpm rack travel mm	out bumper spring : 385 : 5.80
SET IDLE AUXILIAF	RY SPRING
Rated speed rpm rack travel mm Tolerance mm	: 500 : 3.90 : +- 0.10
Load pick-up	
Rated speed rpm rack travel mm	: 200 : 12.50
Rated speed rpm	: 1000
CRT mm max.	: 1.85
rack travel mm Rated speed rpm	: 5.80 : 385
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 13.75 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1700 : 13.45 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 2000 : 12.95 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 11.80 : +- 0.10

SETTING		+ Del. quantity
35111140		+ cm3/1000 strokes : 43.2
Rated speed rpm	: 1000	+ Tolerance
Ref. pressure	. 1000	+ cm3/1000 strokes : + 0.5
ALDA / ADA hPa	: 1400	+ Check tolerance
rack travel mm		+ cm3/1000s. : + 1.5
Tolerance mm	: +- 0.20	Spreed
		Tolerance
MEASUREMENT		+ cm3/1000 strokes : 2.5
		- Check tolerance
Rated speed rpm	: 1000	+ cm3/1000s. : 3.0
Ref. pressure		+
ALDA / ADA hPa		+ Ref. pressure
rack travel mm	: 1.95	+ ALDA / ADA hPa : 1100
Tolerance mm	: ← 0.10	+ Rated speed rpm : 1000
		+ Del. quantity
Ref. pressure	750	+ cm3/1000 strokes : 43.2
ALDA / ADA hPa	: 750	Tolerance
rack travel mm	: 3.80	+ cm3/1000 strokes : + 0.5
Tolerance mm	: +- 0.20	+ Check tolerance
		+ cm3/1000s. : +- 1.5
		+ Spreed
FUEL DELTHERY OUR	LOACTED TOTTOG	† Tolerance
FUEL DELIVERY CHA	ARACTERISTICS	+ cm3/1000 strokes : 2.5
D. £		+ Check tolerance
Ref. pressure	4/00	+ cm3/1000s. : 3.0
ALDA / ADA hPa		Ť
Rated speed rpm	: 1700	†
Del. quantity cm3/1000 strokes	: 53.8	UTCH TOLE
Tolerance	; 33.0	+ HIGH IDLE
cm3/1000 strokes	: ← 0.8	Ref. pressure
Check tolerance	. 1- 0.0	+ ALDA / ADA hPa : 1600
cm3/1000s.	: + 1.8	Rated speed rpm : 2250
Spreed	. 1 1.0	rack travel mm : 8.75
Tolerance		+ Tolerance mm : + 0.20
cm3/1000 strokes	: 2.5	+ Del. quantity
Check tolerance	. 2.3	+ cm3/1000 strokes : 32.9
cm3/1000s.	: 3.0	+ Tolerance
		+ cm3/1000 strokes : + 2.0
Ref. pressure		- Check tolerance
ALDA / ADA hPa	: 1600	+ cm3/1000s. : + 3.0
Rated speed rpm	: 2000	Spreed
Spreed		+ Tolerance
Del. quantity		+ cm3/1000 strokes : 2.5
cm3/1000 strokes	: 52.1	- Check tolerance
Tolerance		+ cm3/1000s. : 3.0
cm3/1000 strokes	: + 1.0	+
Check tolerance		
cm3/1000s.	: +- 2.0	+ STARTING FUEL DELIVERY
Spreed		†
Tolerance		+ Rated speed rpm : 100
cm3/1000 strokes	: 2.5	rack travel mm : 21.50
Check tolerance		+ Tolerance mm : +- 1.50
cm3/1000s.	: 3.0	+ Del. quantity
0-4		+ cm3/1000 strokes : 58.3
Ref. pressure	. 1100	+ Tolerance
ALDA / ADA hPa	: 1100	+ cm3/1000 strokes : + 4.0
Rated speed rpm	: 1000	+ Check tolerance + cm3/1000s. : +- 5.0
		T (1113/1000). : 7- 5.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s.

: 6.0

LOW IDLE

Rated speed rpm

385

Del. quantity

cm3/1000 strokes :

9.5

Check tolerance

cm3/1000s.

2.3

Spreed

Check tolerance

cm3/1000s.

1.5

control lever

position degree : > 45.00

control lever

position degree : < 42.50

SETTING PNEUMATIC FAST IDLE (PLA)

(PLA) POSITION

control lever

position degree :

11.0

Rated speed rpm :

400

Rack travel in mm :

8.85

Tolerance mm

: +- 0.80

Del. quantity cm3/1000 strokes :

25.3

Tolerance

cm3/1000 strokes : +- 4.0

Check tolerance

cm3/1000s.

: **←** 5.0

Vacuum hPa

: 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm

385

Vacuum hPa

-450.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24,10,97 : ISO 4113

Combination No. : 0 401 856 159

Injection pump

Pump designation : PE6P110A721RS369 EP type number : 0 411 816 121

Governor

Governer design. : RG300/1300PA412-6 Governer no. : 0 421 801 638

Cust. part No. :

Customer-spec. information

Customer : HAEP

Motor

: WD615.60

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

173.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter:

3.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

x length mm : 600

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 2.85 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

: +- 0.75 tolerance °NW

Start of delivery mark

Tolerance : \leftarrow 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.15

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 147.0

Tolerance

cm3/1000 strokes : +- 1.0

H21

	1	Tolerance
Check tolerance cm3/1000s.	: + 3.5	cm3/1000 strokes : 4.0 Check tolerance
Spreed	<u> </u>	cm3/1000s. : 7.5
Tolerance cm3/1000 strokes	: 4.0	CONTROL LEVER
Check tolerance cm3/1000s.	: 7.5	control lever position degree : 109.0 tolerance degree : +- 4.0
Rated speed rpm	+	RATED SPEED rack travel mm : 13.10 Rated speed rpm : 1353
Rack travel in mm Tolerance mm Del. quantity		Tolerance 1/min : +- 8 rack travel mm : 4.00
cm3/1000 strokes Tolerance	}	Rated speed rpm : 1440 Tolerance 1/min : +- 15
cm3/1000 strokes Check tolerance cm3/1000s. Spreed	}	rack travel mm : 0.70 Tolerance mm : +- 0.70 Rated speed rpm : 1550
Tolerance cm3/1000 strokes Check tolerance	: 4.0	nated speed in . 1990
cm3/1000s.	: 7.0	LOW IDLE
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP +	control lever position degree : 78.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSIT	TION	Setting point w/out bumper spring
control lever	<u> </u>	Rated speed rpm : 100
position degree Rated speed rpm		CRT mm min. : > 7.40 Testing:
Rack travel in mm Tolerance mm		Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : +- 0.10
FULL LOAD DELIVERY	AT FULL LOAD STOP	rack travel mm : 2.00
Aneroid pressure hPa	: 1300 : 700	Rated speed rpm : 420 Tolerance 1/min : + 20
Del. quantity cm3/1000 strokes Tolerance	: 147.0	TORQUE CONTROL
cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: + 1.0 : + 3.5	Dimension a mm : 0.40 Rated speed rpm : 1300 rack travel mm : 14.15 Tolerance mm : +- 0.05

Rated speed rpm rack travel mm Tolerance mm	: 700 : 14.40 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 700 : 14.80 : + 0.20
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 14.40 : + 0.20
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rom Pressure hPa rack travel mm Tolerance mm	: 700 : 700 : 14.40 : +- 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 700 : - : 12.50 : +- 0.10
MEASUREMENT	
Rated speed rpm	: 700
Pressure hPa rack travel mm Tolerance mm	: 300 : 13.00 : ← 0.10
Pressure hPa rack travel mm Tolerance mm	: 390 : 14.15 : + 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 700 : 700
Del. quantity cm3/1000 strokes Tolerance	: 137.0
cm3/1000 strokes Check tolerance cm3/1000s.	: + 2.0 : + 5.0
Aneroid pressure	
hPa	. 700

Del. quantity cm3/1000 strokes : 102.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 3.5 : +-STARTING FUEL DELIVERY Rated speed rpm 100 rack travel mm : 17.00 Tolerance mm : +- 0.50 Del. quantity cm3/1000 strokes : 145.0 Tolerance cm3/1000 strokes : +- 10.0Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Rated speed rpm : 300 Rack travel in mm : 6.00 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 21.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +-5.5 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 7.0

End of test specification sheet

Rated speed rpm :

700

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24,10,97 : ISO 4113

Combination No. : 0 402 044 700

Injection pump

Pump designation : PES4P110A320RS3350 EP type number : 0 412 014 700

Governor

Governer design. : RQV350...1400PA1221K

Governer no. : 0 421 815 472

Cust. part No. : 16700-D8703 / M

: -2004

Customer-spec. information

Customer : NMI

: 84.40 EURO II Motor

Power KW : 101.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm \cdot 4.55 Tolerance mm \cdot + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 : +- 0.50 Tolerance mm

Firing order : 4-2-1-3

...asing : 0-90-180-270
Tolerance : +- 0 50

Check

: **←** 0.75 tolerance °NW

Start of delivery mark

*NW after s.o.d. : 180.00

Tolerance : \leftarrow 0.50 Check

tolerance °NW : + 0.75

Barrel no. : 4

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 15.40

Tolerance mm : +- 0.05

Del. quantity	† Tolerance mm : + 0.25
cm3/1000 strokes : 178.0	Rated speed rpm : 1730
Tolerance	+ guide sleeve
cm3/1000 strokes : + 1.0	+ travel mm : 13.50
	+ Tolerance mm : + 0.50
Check tolerance cm3/1000s. : +- 3.0	†
CHS/ 10003	GUIDE SLEEVE POSITION
Spreed	+
	+
Tolerance cm3/1000 strokes : 5.0	t control lever
CIID/1000 Strokes . J.O	position degree : - 1 Rated speed rpm : 1515
Check tolerance	+
cm3/1000s. : 9.0	Rack travel in mm: 14.50
	Tolerance mm : +- 1.30
Rated speed rpm : 350	FULL LOAD DELIVERY AT FULL LOAD STOP
	+
Rack travel in mm : 9.40 Tolerance mm : +- 0.10	Rated speed rpm : 1300
Tolerance mm : +- 0.10 Del. quantity	+ Aneroid pressure + hPa : 1500
cm3/1600 strokes : 31.0	Del. quantity
Tolerance	+ cm3/1000 strokes : 178.0
cm3/1000 strokes : + 2.5	+ Tolerance
Check tolerance cm3/1000s. : +- 5.0	+ cm3/1000 strokes : + 1.0
Spreed	+ Check tolerance + cm3/1000s. : + 3.0
Tolerance	+ Spreed
cm3/1000 strokes : 6.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : 5.0
cm3/1000s. : 10.0	+ Check tolerance + cm3/1000s. : 9.0
	T (ms/1808s /.8
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	
	CONTROL LEVER
GUIDE SLEEVE TRAVEL	- control lever
	+ position degree : 65.0
Rated speed rpm : 1417	tolerance degree : +- 4.0
guide sleeve travel mm : 9.99	t control lever
Tolerance mm : + 0.15	position degree : 122.0
	tolerance degree : + 4.0
Rated speed rpm : 350	+
guide sleeve	+ RATED SPEED
travel mm : 1.46 Tolerance mm : + 0.20	+ rack travel mm : 14.40 + Rated speed rpm : 1410
roterative time	+ Tolerance 1/min : +- 5
Rated speed rpm : 994	+
guide sleeve	rack travel mm : 4.00
travel mm : 6.77	Rated speed rpm : 1585
Tolerance mm : $+$ 0.25	Tolerance 1/min : +- 15
Rated speed rpm : 610	rack travel mm : 0.50
guide sleeve	+ Tolerance mm : + 0.50
travel mm : 3.96	+ Rated speed rpm : 1640

LOW IDLE	
control lever position degree tolerance degree	: 82.0 : +- 4.0
control lever position degree tolerance degree	: 26.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 250
CRT mm min.	: > 10.70
Testing:	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm	: 500
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1300 : 15.40 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 780 : 13.70 : + 0.15
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 14.30 : + 0.20
Rated speed rpm rack travel mm Tolerance mm	: 1250 : 15.40 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1300 : 1500 : 15.40 : +- 0.10
Rated speed rpm	: 1300

Pressure hPa rack travel mm Tolerance mm	: - : 12.60 : + 0.10
MEASUREMENT	
Rated speed rpm	: 1300
Pressure hPa rack travel mm Tolerance mm	: 660 : 14.30 : + 0.10
Pressure hPa rack travel mm Tolerance mm	: 520 : 13.1C : +- 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : > 270
Check speed 1/min Check	: > 80
speed 1/min	: > 290
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1500 : 780

Aneroid pressure	4.500	
hPa	: 1500	
Rated speed rpm Del. quantity	: 780	
cm3/1000 strokes	: 154	Ω
Tolerance	• ()+	. 0
cm3/1000 strokes	: +- 2	.0
Check tolerance		
cm3/1000s.	: +- 5	.0
Spreed		
Tolerance cm3/1000 strokes	: 12	Ω
Check tolerance	• 14	.0
cm3/1000s.	: 16	.0
Aneroid pressure		
hPa	: 1500	
Rated speed rpm	: 1000	
Del. quantity	4.5	
cm3/1000 strokes Tolerance	: 165	.U
cm3/1000 strokes	• +_ 3	.0
Check tolerance		. 0
cm3/1000s.	: +- 6	.0

Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 136.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 200.0 Tolerance

cm3/1000 strokes : + 15.0

Check tolerance

cm3/1000s. : + 19.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm: 9.40 Tolerance mn: + 0.10 Del. quantity

cm3/1000 strokes : 31.0

Tolerance

cm3/1000 strokes : + 2.5 Check tolerance

cm3/1000s.

: +- 5.0 Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 28.10.97 : ISO 4113

Combination No. : 0 402 074 700

Injection pump

Pump designation : PES4P110B720RS3383

EP type number : 0 412 014 701

Governor

Governer design. : RSV300...1100P1A667

Governer no. : 0 421 833 582

Cust. part No. : 9880216

Customer-spec. information

Customer : LIEBHERR

Motor

: D 924 TI-E A2

Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

207.0

Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.20 Tolerance mm : + 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 4-2-1-3

: 0-90-180-270 Phasing

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

: + 0.10 Tolerance

Check

tolerance °NW : + 0.75

Barrel no. : 4

BASIC SETTING

Rated speed rpm : 880

Rack travel in mm: 13.85

Tolerance mm : + 0.05

H28

Del. quantity + cm3/1000 strokes : 203.0 +	Aneroid pressure hPa : 1500
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 203.0 Tolerance
Check tolerance cm3/1000s. : + 3.5	<pre>cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.5</pre>
Spreed	Spreed Tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	
	CONTROL LEVER
Rated speed rpm : 500	control lever position degree : 94.0 tolerance degree : +- 4.0
Rack travel in mm : 4.60 + Tolerance mm : + 0.10 +	RATED SPEED rack travel mm : 12.85
Del. quantity cm3/1000 strokes : 24.0 + Tolerance +	Rated speed rpm : 920 Tolerance 1/min : +- 5
cm3/1960 strokes : - 3.0 + Check tolerance + 5.5 + 5.5	rack travel mm : 4.00 Rated speed rpm : 990
Spreed +	Tolerance 1/min : +- 15
cm3/1000 strckes : 4.5 + Check tolerance + cm3/1000s. : 7.5 +	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1200
(B) SETTING OF INJECTION PUMP + WITH GOVERNOR +	rack travel mm : 4.00 Rated speed rpm : 1000 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : -3 Rated speed rpm : 800	control lever position degree : 83.0 tolerance degree : +- 4.0
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring + pre-tension + click setting x : 5.00 +	Rated speed rpm : 500 rack travel mm : 2.80 Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Testing:
Rated speed rpm : 880	Rated speed rpm : 500 rack travel mm : 4.60 Tolerance mm : +- 0.10

rack travel mm Rated speed rpm Tolerance 1/min	: 595	cm3 + Ane	ck tolerance 7/1000s. 	·
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 880 : 13.85 : + 0.05	+ Del + cm3 + Tol	ed speed rpm . quantity 6/1000 strokes erance 6/1000 strokes	: 214.0
Rated speed rpm rack travel mm Tolerance mm	: 13.90	+ Che	ck tolerance 3/1000s.	
Rated speed rpm rack travel mm Tolerance mm	: 13.90	+ hPa + Rat + Del 	ed speed rpm quantity 5/1000 strokes	
ANEROID/ALTITUDE COMPENSATOR TEST		+ cm3 + Che	erance 5/1000 strokes ck tolerance 5/1000s.	
SETTING			7 10000.	. ' 3.5
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1500 : 13.85	+ + Rat	RTING FUEL DELI	: 100
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: - : 11.25	+ Tol + Del + cm3 + Tol + cm3 + Che	k travel mm erance mm quantity 6/1000 strokes erance 6/1000 strokes eck tolerance	: ∠0.50 : ← 0.50 : 155.0 : ← 15.0
Rated speed rpm	: 550	+ cm3	3/1000s.	: ← 19.0
Pressure hPa rack travel mm Tolerance mm	: 830 : 13.20 : + 0.05	LOW	IDLE	
	: 750 : 11.90 : + 0.10	+ Rac + Tol + Del	ed speed rpm k travel in mm erance mm . quantity	: 4.60 : +- 0.10
FUEL DELIVERY CHA	ARACTERISTICS	+ Tol	7/1000 strokes erance 7/1000 strokes	
Aneroid pressure hPa Rated speed rpm	: 1500 : 500	+ Che + cm3 + Spr	ck tolerance //1000s. eed erance	: +- 5.5
Del. quantity cm3/1000 strokes		+ cm3	7/1000 strokes	: 4.5
Tolerance cm3/1000 strokes		•	7/1000s.	: 7.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 27.10.97 : ISO 4113

Combination No. : 0 402 646 680

Injection pump

Pump designation : PE6P120A320RS7447 EP type number : 0 412 626 970

Governor

Governer design. : RQ275/1150PA1361

Governer no. : 0 421 801 825

Cust. part No. : 1329586

Customer-spec. information

Customer : DAF

: GS 200-RQ Motor Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Tolerance bar : + 0.1

Overflow quantity
min. L/h : 150
Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 : + 1.5 bar Tolerance bar

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 11.70 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10

Check

tolerance °NW : +- 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.70 Tolerance mm : + 0.05

	+ guide sleeve
Del. quantity	travel mm : 4.47
cm3/1000 strokes : 178.0	+ Tolerance ma : +- 0.10
	1000141100 11111
Tolerance	Rated speed rpm : 440
cm3/1000 strokes : +- 1.0	guide sleeve
	+ travel mm : 6.00
Check tolerance	+ Tolerance mm : + 0.10
cm3/1000s. : +- 4.0	Total area min
	Rated speed rpm : 1360
Spreed	guide sleeve
Sp. CCG	travel mm : 11.50
Tolerance	Tolerance mm : +- 0.50
cm3/1000 strokes : 5.0	1 Total artice min . 7 0.50
5.0	
Check tolerance	F GUIDE SLEEVE POSITION
cm3/1000s. : 9.0	
	Rated speed rpm : 600
	Thatea opera (piii : ooo
	Rack travel in mm: 16.00
Rated speed rpm : 275	+ Tolerance mm : +- 0.40
	10001 0.700 11.11
Rack travel in mm : 5.05	
Tolerance mm : + 0.10	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity	+
cm3/1000 strokes : 24.0	+ Rated speed rpm : 1000
Tolerance	+ Aneroid pressure
cm3/1000 strokes : +- 1.0	+ hPa : 1000
Check tolerance	Del. quantity
cm3/1000s. : + 4.0	+ cm3/1000 strokes : 178.0
Spreed	+ Tolerance
Tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000 strokes : 8.0	- Check tolerance
Check tolerance	+ cm3/1000s. : + 4.0
cm3/1000s. : 12.0	Spreed
	+ Tolerance
	+ cm3/1000 strokes : 5.0
(B) SETTING OF INJECTION PUMP	- Check tolerance
WITH GOVERNOR	+ cm3/1000s. : 9.0
	+
	+
GUIDE SLEEVE TRAVEL	+
	+ CONTROL LEVER
Rated speed rpm : 1205	+
guide sleeve	+ control lever
travel mm : 6.49	+ position degree : 99.0
Tolerance mm : + 0.15	tolerance degree : +- 4.0
Date of annual ways and DEC	T DATES OFFE
Rated speed rpm : 275	+ RATED SPEED
guide sleeve	rack travel mm : 10.70
travel mm : 1.97	Rated speed rpm : 1202
Tolerance mm : + 0.20	Tolerance 1/min : +- 8
Rated speed rpm : 1150	T mank thought mm . / 00
	+ rack travel mm : 4.00
guide sleeve travel mm : 6.00	+ Rated speed rpm : 1280 + Tolerance 1/min : +- 15
	† Tolerance 1/min : +- 15
Tolerance mm : +- 0.10	rack travel mm : 0.70
Rated speed rpm : 356	+ rack travel mm : 0.70 + Tolerance mm : +- 0.70
Rated speed rpm : 356	
	+ Rated speed rpm : 1450

LOW IDLE

control lever

position degree : 73.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 6.40

Testing:

Rated speed rpm 275 5.05 rack travel mm Tolerance mm : + 0.10

: 2.00 rack travel mm Rated speed rpm : 355 Tolerance 1/min : +

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 11.70 Tolerance mm : +- 0.05

Rated speed rpm : 1150 rack travel mm : 11.70 : + 0.10Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600 Pressure hPa 1000 11.70 rack travel mm : +- 0.05 Tolerance mm

Rated speed rpm 600 Pressure hPa rack travel mm 6.70 Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 600

220 Pressure hPa 10.50 rack travel mm

Tolerance mm : +- 0.05

: 100 Pressure hPa 8.10 rack travel mm : +- 0.15 Tolerance mm

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

600 Rated speed rpm : Del. quantity

cm3/1000 strokes : 101.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. : +-6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0 Check tolerance

cm3/1000s.12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.05 Tolerance mm : +-0.10

Del. quantity

cm3/1000 strokes : 24.0 Tolerance

cm3/1000 strokes : +-1.0 Check tolerance

cm3/1000s.: +-4.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 23.10.97 : ISO 4113

Combination No. : 0 402 648 703

Injection pump

Pump designation : PE&P120A320LS7880 EP type number : 0 412 628 889

Governor

Governer design. : RQV350...1050PA1352

Governer no. : 0 421 814 197

Cust. part No. : 0270747202

Customer-spec. information

Customer : MB-NFZ

: 0M442 LA euromot : 405.0 Motor

Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 200 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar bar : 208.5 Tolerance bar : + 1.5 Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : +-4.75 : +- 0.05

Check

tolerance nim : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : \leftarrow 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

: 0-45-90-135-180 Phasing

: -225-270-315

: ← 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

: +- 0.10 Tolerance

Check

: +- 0.75 tolerance °NW

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

	t
Rack travel in mm : 15.00 Tolerance mm : +- 0.05	+ Rated speed rpm : 580 + guide sleeve
	+ travel mm : 3.62
Del. quantity cm3/1000 strokes : 282.0	Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : + 1.0	+ Rated speed rpm : 1204 + guide sleeve + travel mm : 10.00
	+ Tolerance mm : + 0.25
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 1300 guide sleeve
Spreed	+ travel mm : 11.50
·	+ Tolerance mm : + 0.50
Tolerance cm3/1000 strokes : 6.0	CUIDE SI FEVE POSITION
Check tolerance	+ GUIDE SLEEVE POSITION
cm3/1000s. : 9.0	I
. ,.0	+ control lever
	position degree : - 1
	+ Rated speed rpm : 1154
Rated speed rpm : 350	+
Deals Assessed for many 5, 70	+ Rack travel in mm : 14.00
Rack travel in mm;: 5.70 Tolerance mm : +- 0.10	+ Tolerance im : +- 1.30
Del. quantity	Ī
cm3/1000 strokes : 19.0 Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : +- 3.0	Rated speed rpm : 1050
Check tolerance	+ Aneroid pressure
cm3/1000s. : +- 6.0	+ hPa : 1300
Spreed	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 282.0
cm3/1000 strokes : 6.0	+ Tolerance
Check tolerance cm3/1000s. : 10.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance
CIID/ 10003 10.0	+ cm3/1000s. : +- 4.0
	+ Spreed
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	- cm3/1000 strokes : 6.0
	+ Check tolerance
	+ cm3/1000s. : 9.0
GUIDE SLEEVE TRAVEL	†
Rated speed rpm : 1110	T
guide sleeve	CONTROL LEVER
travel mm : 8.10	+ CONTINUE EEVEN
Tolerance mm : + 0.15	control lever
	position degree : 119.0
Rated speed rpm : 350	+ tolerance degree : +- 4.0
guide sleeve travel mm : 1.48	+ RATED SPEED
Tolerance mm : +- 0.20	+ rack travel mm : 14.00
TOTAL TOTAL	Rated speed rpm : 1098
Rated speed rpm : 900 guide sleeve	Tolerance 1/min : +- 8
travel mm : 5.69	rack travel mm : 4.00
Tolerance mm : + 0.25	+ Rated speed rpm : 1190

Tolerance 1/min : +-	15 +		
rack travel mm : + (0.75	Start interlock	
Rated speed rpm : 12	50 +	Rated speed rpm	
	†	Rated speed rpm	: < 270
	†	Check	: > 190
LOW IDLE	Ī	speed 1/min Check	: > 190
	<u> </u>	speed 1/min	: < 290
control lever position degree : +		FUEL DELIVERY CHAR	*ACTERISTICS
Setting point w/out bumpe	er spring	Aneroid pressure hPa	: 1300
Rated speed rpm : 25	50	Rated speed rpm	
indica opeca i piii i i i i i	1	Del. quantity	. 000
CRT me min. :>	7.50	cm3/1000 strckes	: 298.5
Tanklan	†	Tolerance	. 7.0
Testing:	1	cm3/1000 strokes Check tolerance	: + 3.0
Rated speed rpm : 3	50 I	cm3/1000s.	: +- 6.0
rack travel mm :		Spreed	
Tolerance mm : +- (D.10 +	Tolerance	
	+	cm3/1000 strokes	: 8.0
Rated speed rpm : 44	JU †	Check tolerance cm3/1000s.	: 12.0
	I	CM3/ 10003.	. 12.0
TORQUE CONTROL	<u> </u>		
Rated speed rpm : 10	50	Aneroid pressure	
rack travel mm : 1:		hPa	: -
Tolerance mm : + (1	Rated speed rpm Del. quantity	: 500
Rated speed rpm : 60	00	cm3/1000 strokes	: 132.0
rack travel mm : 1	5.00	Tolerance	
Tolerance mm : +- (D.05 +	cm3/1000 strokes	: +- 1.0
	†	Check tolerance	: +- 4.0
ANEROID/ALTITUDE	T I	cm3/1000S. Spreed	: +- 4.0
COMPENSATOR TEST	+	Tolerance	
	+	cm3/1000 strokes	: 8.0
OCTURNO.	+	Check tolerance	42.0
SETTING	Ī	cm3/1000s.	: 12.0
Rated speed rpm : 50	oo I		
Pressure hPa :	- +	REDUCED QUANTITY	
	+		
MEASUREMENT	†	Aneroid pressure hPa	: 1300
Pressure hPa : 50	oo I	Rated speed rpm	: 1050
	1.40	Del. quantity	
Tolerance mm : +- (0.05	cm3/1000 strokes	: 225.0
Danes - 400	+	Tolerance	
Pressure hPa : 100 rack travel mm : 5		cm3/1000 strokes Check tolerance	: +- 2.0
Tolerance mm : +- (cm3/1000s.	: +- 5.0
	+		- -

STARTING FUEL DELIVERY

100 Rated speed rpm : Del. quantity

cm3/1000 strokes :

280.0

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm : 350

5.70 Rack travel in mm : Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0

Tolerance 3.0 cm3/1000 strokes : +-

Check tolerance

cm3/1000s.: +- 6.0

Spreed Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s.10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.10.97 Test oil : ISO 4113

Combination No. : 0 402 666 805

Injection pump

Pump designation : PE6P12OA32O/3LS7914 EP type number : 0 412 626 968

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Governor design. : RSV600...1050P0A642

Governer no. : 0 421 833 556

Cust. part No. : 0280743702

Customer-spec. information
Customer : MB-NFZ
Motor : OM 441 LA
Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.75
Tolerance mm : +- 0.05
Check

Lneck

tolerance mm : +- 0.10

Rack travel in mm : 19.00 Tolerance mm : +- 0.50

Firing order : 6-3-5-2-4-

: 1

Phasing : 0-45-120-165-240

: -285

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance *NW : +- 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 13.70 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 251.0

Tolerance - cm3/1000 strokes : + 1.0	Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : +- 4.0	- Check tolerance - cm3/1000s. : +- 4.0 - Spreed
Spreed	Tolerance cm3/1000 strokes : 6.0
Tolerance - cm3/1000 strokes : 6.0	- Check tolerance - cm3/1000s. : 9.0 -
Check tolerance cm3/1000s. : 9.0	- CONTROL LEVER
Rated speed rpm : 600	control lever position degree : 86.0 tolerance degree : +- 4.0
Rack travel in mm: 4.10 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 17.0 Tolerance cm3/1000 strokes: + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance	RATED SPEED rack travel mm : 12.70 Rated speed rpm : 1115 Tolerance 1/min : +- 5 Check speed 1/min : +- 10
cm3/1000 strokes : 8.0 - Check tolerance cm3/1000s. : 12.0	LOW IDLE control lever
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	position degree : 71.0 tolerance degree : +- 4.0 Testing:
GUIDE SLEEVE POSITION	Rated speed rpm : 600 rack travel mm : 4.10 Tolerance mm : +- 0.10
control lever - position degree : - 3 Rated speed rpm : 800 -	SET IDLE AUXILIARY SPRING rack travel mm : 2.00
Rack travel in mm: 0.50 Tolerance mm: + 0.20 governor spring	TORQUE CONTROL Rated speed rpm : 1075 rack travel mm : 13.70 Tolerance mm : + 0.05
pre-tension - click setting x : 1.50	- Tolerance mm : + 0.05 - Rated speed rpm : 800
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 14.75 Tolerance mm : +- 0.10
Rated speed rpm : 1075 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 251.0	- Rated speed rpm : 1000 - rack travel mm : 14.35 - Tolerance mm : +- 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 800

Del. quantity

cm3/1000 strokes : 291.0

Tolerance

cm3/1000 strokes : \leftarrow 1.0

Check tolerance

cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 290.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : \leftarrow 19.0

LOW IDLE

Rated speed rpm : 600

Rack travel in mm: 4.10

Tolerance mm: \leftarrow 0.10

Del. quantity

cm3/1000 strokes : 17.0

Tolerance

cm3/1000 strokes : \leftarrow 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.07.96 Test oil : ISO 4113

Combination No. : 0 402 735 820

Injection pump

Pump designation : PES5P120A720/3LS7250

: -1

EP type number : 0 412 725 819

Governor

Governer design. : RQV325...1000PA960

: -10K

Governer no. : 0 421 815 483

Cust. part No. : 51.11103-7484

Customer-spec. information

Customer : MAN
Motor : D2865LF06/LU06
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 150 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 bar

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.85 Tolerance mm : +- 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm : 12.50 Tolerance mm : + 0.50

Firing order : 1-3-5-4-2

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 5

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.30

Tolerance mm : \leftarrow 0.05

	+ guide sleeve
Del. quantity	+ travel mm : 3.97
cm3/1000 strokes : 251.0	+ Tolerance mm : $+$ 0.25
	1
Tolerance	Rated speed rpm : 1240
cm3/1000 strokes : +- 1.0	
CIID/ TODO STROKES: 1.0	guide sleeve
	† travel mm : 13.50
Check tolerance	+ Tolerance mm : +- 0.50
cm3/1000s. : +- 4.0	
Spreed	GUIDE SLEEVE POSITION
opi eed	GOIDE SEELVE TOSITION
Talauana	T
Tolerance	†
cm3/1000 strokes : 10.0	+ control lever
	├ position degree : - 1
Check tolerance	Rated speed rpm : 1106
cm3/1000s. : 14.0	1
	Rack travel in mm : 11.20
	i e
•	Tolerance mm : +- 1.30
	†
Rated speed rpm : 325	
	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 5.50	+
Tolerance mm : +- 0.10	Rated speed rpm : 900
Del. quantity	Aneroid pressure
cm3/1000 strokes : 50.0	† hPa : 1200
Tolerance	+ Del. quantity
cm3/1000 strokes : + 3.0	+ cm3/1000 strokes : 251.0
Check tolerance	† Tolerance
cm3/1000s. : +- 6.0	- cm3/1000 strokes : +- 1.0
Spreed	Check tolerance
·	
Tolerance	+ cm3/1000s. : +- 4.0
cm3/1000 strokes : 8.0	+ Spreed
Check tolerance	+ Tolerance
711000	cm3/1000 strokes : 10.0
cm3/1000s. : 12.0	T Chis/1000 Strokes . 10.0
cm3/1000s. : 12.0	· ·
cm3/1000s. : 12.0	Check tolerance
· -	· ·
(B) SETTING OF INJECTION PUMP	Check tolerance
· -	Check tolerance
(B) SETTING OF INJECTION PUMP	Check tolerance cm3/1000s. : 14.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Check tolerance
(B) SETTING OF INJECTION PUMP	Check tolerance cm3/1000s. : 14.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Check tolerance cm3/1000s. : 14.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve travel mm : 2.20	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045 Tolerance 1/min : +- 5
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045 Tolerance 1/min : +- 5 rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve travel mm : 2.20 Tolerance mm : +- 0.20	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1125
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve travel mm : 2.20	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045 Tolerance 1/min : +- 5 rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve travel mm : 2.20 Tolerance mm : +- 0.20 Rated speed rpm : 768	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1125
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve travel mm : 2.20 Tolerance mm : +- 0.20 Rated speed rpm : 768 guide sleeve	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : +- 15
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve travel mm : 2.20 Tolerance mm : +- 0.20 Rated speed rpm : 768 guide sleeve travel mm : 7.26	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : +- 15 rack travel mm : 0.50
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve travel mm : 2.20 Tolerance mm : +- 0.20 Rated speed rpm : 768 guide sleeve	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : +- 15 rack travel mm : 15 rack travel mm : 15 rack travel mm : 15 rack travel mm : 15
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve travel mm : 2.20 Tolerance mm : +- 0.20 Rated speed rpm : 768 guide sleeve travel mm : 7.26 Tolerance mm : + 0.25	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : +- 15 rack travel mm : 0.50
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve travel mm : 2.20 Tolerance mm : +- 0.20 Rated speed rpm : 768 guide sleeve travel mm : 7.26	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : +- 15 rack travel mm : 15 rack travel mm : 15 rack travel mm : 15 rack travel mm : 15
(B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 1060 guide sleeve travel mm : 10.74 Tolerance mm : + 0.15 Rated speed rpm : 325 guide sleeve travel mm : 2.20 Tolerance mm : +- 0.20 Rated speed rpm : 768 guide sleeve travel mm : 7.26 Tolerance mm : + 0.25	Check tolerance cm3/1000s. : 14.0 CONTROL LEVER control lever position degree : 300.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 1045 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : +- 15 rack travel mm : 15 rack travel mm : 15 rack travel mm : 15 rack travel mm : 15

LOW IDLE	
control lever position degree tolerance degree	: 254.0 : ← 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 225
CRT mm min.	: > 7.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 325 : 5.50 : + 0.10
Rated speed rpm	: 305
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 900 : 12.30 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.20 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 650 : 12.15 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 400 : 11.25 : + 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 900 : 1200 : 12.30 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 900 : - : 8.50 : + 0.15
MEASUREMENT	

Rated speed rpm	: 900	
Pressure hPa rack travel mm Tolerance mm	: 170 : 8.85 : +- 0.05	
Pressure hPa rack travel mm Tolerance mm	: 600 : 11.45 : + 0.15	
Start interlock		
Rated speed rpm Rated speed rpm	: > 100 : < 270	
Check speed 1/min	: > 80	
Check speed 1/min	: < 290	
FUEL DELIVERY CHA	RACTERISTICS	
Aneroid pressure hPa Rated speed rpm	: 1200 : 1000	
Del. quantity cm3/1000 strokes	: 239.0	
Tolerance cm3/1000 strokes Check tolerance	: + 3.0	
cm3/1000s.	: +- 6.0	
Aneroid pressure hPa Rated speed rpm	: 1200 : 650	
Del. quantity cm3/1000 strokes	: 269.0	
Tolerance cm3/1000 strokes	: +- 3.0	
Check tolerance cm3/1000s.	: +- 6.0	
Check tolerance cm3/1000s. Aneroid pressure		
Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm		
Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: +- 6.0 : -	
Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity	: +- 6.0 : - : 500	

STARTING FUEL DELIVERY

Del. quantity cm3/1000 strokes : 190.0

Tolerance

cm3/1000 strokes : + 15.0

Check tolerance cm3/1000s.

: **←** 19.0

LOW IDLE

325 Rated speed rpm :

5.50 Rack travel in mm: : ← 0.10 Tolerance mm

Del. quantity

cm3/1900 strokes : 50.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.10.97 Edition : 24.10.97 Test oil : ISO 4113

Combination No. : 0 402 746 632

Injection pump

Pump designation : PES6P120A720RS7366 EP type number : 0 412 726 933

Governor

Governer design. : RQ300/1050PA1340 Governer no. : 0 421 801 820

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE Motor : 8460.41s.7031 Power KW : 254.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. L/h : 160 Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : ÷- 1.0

Prestroke mm : 2.85 Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

tolerance °NW : +- 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.95

Tolerance mm : +- 0.05	+ guide sleeve + travel mm : 6.13
Del. quantity cm3/1000 strokes : 289.0	Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 399 guide sleeve travel mm : 4.74
Check tolerance cm3/1000s. : +- 4.0	Tolerance mm : +- 0.10 Rated speed rpm : 480
Spreed	guide sleeve travel mm : 6.00
Tolerance	Tolerance mm : + 0.10
cm3/1000 strokes : 5.0	Rated speed rpm : 1270 guide sleeve
Check tolerance cm3/1000s. : 9.0	travel mm : 11.50 Tolerance mm : +- 0.50
700	Rated speed rpm : 877 guide sleeve
Rated speed rpm : 300	travel mm : 6.38 Tolerance mm : + 0.10
Rack travel in mm : 6.00 Tolerance mm : +- 0.10	
Del. quantity cm3/1000 strokes : 23.0	GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : +- 3.0	+ control lever
Check tolerance cm3/1000s. : +- 6.0	position degree : 109 Rated speed rpm : 500
Spreed Tolerance	+ Rack travel in mm : 20.00
cm3/1000 strokes : 8.0 Check tolerance	Tolerance mm : +- 0.80
cm3/1000s. : 12.0	FULL LOAD DELIVERY AT FULL LOAD STOP
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1050
MILL GOAFULOU	+ Aneroid pressure
MILL GOALVIOU	Aneroid pressure : 1200
GUIDE SLEEVE TRAVEL	Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0
GUIDE SLEEVE TRAVEL Rated speed rpm : 1110	Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : +- 1.0
GUIDE SLEEVE TRAVEL Rated speed rpm : 1110 guide sleeve travel mm : 6.85	Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAVEL Rated speed rpm : 1110 guide sleeve	Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed
GUIDE SLEEVE TRAVEL Rated speed rpm : 1110 guide sleeve travel mm : 6.85 Tolerance mm : + 0.15 Rated speed rpm : 300	Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
GUIDE SLEEVE TRAVEL Rated speed rpm : 1110 guide sleeve travel mm : 6.85 Tolerance mm : + 0.15 Rated speed rpm : 300 guide sleeve travel mm : 1.97	Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance
GUIDE SLEEVE TRAVEL Rated speed rpm : 1110 guide sleeve travel mm : 6.85 Tolerance mm : + 0.15 Rated speed rpm : 300 guide sleeve	Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
GUIDE SLEEVE TRAVEL Rated speed rpm : 1110 guide sleeve travel mm : 6.85 Tolerance mm : + 0.15 Rated speed rpm : 300 guide sleeve travel mm : 1.97 Tolerance mm : + 0.20 Rated speed rpm : 1050	Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0 RATED SPEED
GUIDE SLEEVE TRAVEL Rated speed rpm : 1110 guide sleeve travel mm : 6.85 Tolerance mm : + 0.15 Rated speed rpm : 300 guide sleeve travel mm : 1.97 Tolerance mm : + 0.20 Rated speed rpm : 1050 guide sleeve travel mm : 6.50	Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 RATED SPEED rack travel mm : 11.90 Rated speed rpm : 1103
GUIDE SLEEVE TRAVEL Rated speed rpm : 1110 guide sleeve travel mm : 6.85 Tolerance mm : + 0.15 Rated speed rpm : 300 guide sleeve travel mm : 1.97 Tolerance mm : + 0.20 Rated speed rpm : 1050 guide sleeve	Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 289.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 RATED SPEED rack travel mm : 11.90

rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min	: 1190
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 1350
LOW IDLE	
control lever position degree tolerance degree	: 74.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 200
CRT mm min.	: > 8.15
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 6.00 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1050 : 12.95 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 14.10 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.90 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 875 : 13.25 : + 0.15

SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1200 : 14.10 : + 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 9.30 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 250 : 10.45 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 500 : 12.60 : +- 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 200 : < 240
Check speed 1/min Check speed 1/min	: > 180 : < 260
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1200 : 500 : 322.0 : +- 4.0 : +- 7.0
Aneroid pressure hPa Rated speed rpm Del. quantity	: - 600
cm3/1000 strokes	: 151.0

Tolerance

Check tolerance cm3/1000s.

cm3/1000 strokes : + 1.0

: +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm 100 11.30 rack travel mm Tolerance mm : +- 0.50 Del. quantity cm3/1000 strokes : 110.0

Tolerance

cm3/1000 strokes : \leftarrow 15.0

Check tolerance

cm3/1000s.: + 19.0

LOW IDLE

Rated speed rpm 300

Rack travel in mm: 6.00 Tolerance mm : **←** 0.10 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : \leftarrow 3.0 Check tolerance

cm3/1000s.

: +- 6.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 23, 10, 97 : ISO 4113

Combination No. : 0 402 746 647

Injection pump

Pump designation : PES6P120A720RS7366

EP type number : 0 412 726 933

Governor

Governer design. : RQV275...1100PA1208K

Governer no. : 0 421 815 459

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE : 8460.41.4000 Motor

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C : +-2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 1-5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.45 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 276.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.

: +- 4.0

Spreed

Tolerance cm3/1000 strokes : 5.0	+ Aneroid pressure + hPa : 1200
Check tolerance cm3/1000s. : 9.0	- Del. quantity - cm3/1000 strokes : 276.0 - Tolerance
	cm3/1000 strokes : + 1.0 Check tolerance
Rated speed rpm : 275	+ cm3/1900s. : + 4.0 + Spreed
Rack travel in mm: 6.70 Tolerance mm: + 0.10	Tolerance cm3/1000 strokes : 5.0 Check tolerance
Del. quantity cm3/1000 strokes : 23.0	+ cm3/1000s. : 9.0
Tolerance cm3/1000 strokes : +- 3.0 Check tolerance	CONTROL LEVER
cm3/1000s. : + 6.0 Spreed	+ control lever
Tolerance cm3/1000 strokes : 8.0	position degree : 117.0 tolerance degree : + 4.0
Check tolerance cm3/1000s. : 12.0	RATED SPEED rack travel mm : 11.40 Rated speed rpm : 1145
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance 1/min : +- 5 Check speed 1/min : +- 10
GUIDE SLEEVE TRAVEL	rack travel mm : 4.00 Rated speed rpm : 1260
Rated speed rpm : 1155 guide sleeve	+ Tolerance 1/min : + 15 + Check
travel mm : 9.75 Tolerance mm : + 0.15	+ speed 1/min : +- 20 + rack travel mm : 0.50
Rated speed rpm : 275 guide sleeve	+ rack travel mm : 0.50 + Tolerance mm : +- 0.50 + Rated speed rpm : 1350
travel mm : 1.70 Tolerance mm : + 0.20	+
Rated speed rpm : 790 guide sleeve	LOW IDLE
guide sleeve travel mm : 6.42 Tolerance mm : +- 0.25	+ + control lever
Rated speed rpm : 460 guide sleeve	position degree : 76.0 tolerance degree : + 4.0
travel mm : 3.77 Tolerance mm : + 0.25	+ Setting point w/out bumper spring
Rated speed rpm : 1440 guide sleeve	Rated speed rpm : 100
travel mm : 13.50 Tolerance mm : + 0.50	CRT mm min. :> 8.20
ENL LOAD DELTVEDY AT ELLE LOAD CTOD	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1100	Rated speed rpm : 275 rack travel mm : 6.70 Tolerance mm : +- 0.10

	+	
Rated speed rpm	: 335	Aneroid pressure
	†	hPa : 1200
TORQUE CONTROL		Rated speed rpm : 650
Rated speed rpm	: 1100	Del. quantity cm3/1000 strokes : 283.0
rack travel mm	: 12.45	Tolerance : 283.0
Tolerance mm	: + 0.05	cm3/1000 strokes : +- 3.0
IOLEI AIRE IMI	0.03	Check tolerance
Rated speed rpm	. 650	cm3/1000s. : +- 6.0
rack traval mm	: 13 30	· · · · · · · · · · · · · · · · · · ·
rack travel mm Tolerance mm	· + 0 10	
rocer direct mili	I	Aneroid pressure
Rated speed rpm	· 800 I	hPa : 1200
rack travel mm		Rated speed rpm : 800
Tolerance mm		Del. quantity
TO COLUMN TO THE	· · · · · · · · · · · · · · · · · · ·	cm3/1000 strokes : 295.5
	T	Tolerance : 293.3
ANEROID/ALTITUDE	I	cm3/1000 strokes : + 3.0
COMPENSATOR TEST	I	Check tolerance
COM LHOMFOR TEST	T	cm3/1000s. : +- 6.0
	1	CHD/ 10005. ; #= 0.U
SETTING	I	
	1	Aneroid pressure
Rated speed rpm	: 800	hPa : -
Pressure hPa		Rated speed rpm : 650
rack travel mm		Del. quantity
Tolerance mm		cm3/1000 strokes : 152.0
TOCCI GITTE HER	I	Tolerance
Rated speed rpm	: 800	cm3/1000 strokes : +- 1.0
Pressure hPa	: - 1	Check tolerance
	9.40	cm3/1000s. : +- 4.0
Tolerance mm	· 7.40 †	CIII.27 (UUU3. : #- 4.U
TOLET ATICE THIS	T	
MEASUREMENT	Ţ	
	+	STARTING FUEL DELIVERY
Rated speed rpm	: 800	
•	+	Rated speed rpm : 100
Pressure hPa	: 290	rack travel mm : 12.00
rack travel mm	: 10.60	Tolerance mm : +- 0.30
Tolerance mm	: + 0.20	Del. quantity
	1	cm3/1000 strckes : 115.0
Pressure hPa	: 520	Tolerance
rack travel mm	: 12.50	cm3/1000 strokes : +- 15.0
Tolerance mm	: + 0.05	Check tolerance
	1	cm3/1000s. : +- 19.0
Start interlock	+	
Datad speed non	170	
Rated speed rpm	:> 170	LOU TNE
Rated speed rpm	: < 220 +	LOW IDLE
Check	†	Rated speed rpm : 275
	: > 150	Rated speed rpm : 275
speed 1/min	: > 150 +	Pool travel in my
Check	†	Rack travel in mm: 6.70
speed 1/min	: < 240 +	Tolerance mm : +- 0.10
	†	Del. quantity
	+	cm3/1000 strokes : 23.0
CUEL DEL YUEDV DUA	DACTEDICTICS	Tolerance
FUEL DELIVERY CHA	KACIEKISIICS T	cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance

cm3/1000 strokes :

8.0

Check tolerance cm3/1000s.

: 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.10.97 Test oil : ISO 4113

Combination No. : 0 402 796 041

Injection pump

Pump designation : PES6H110/320RS19 EP type number : 0 412 716 006

Governor

Governer design. : RE36

Governer no. : 0 421 890 374

Cust. part No. : 8192870 PO4 v.07/97

Customer-spec. information

Customer : VOLVO-TRUCK

Motor : D7C Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 4(EHAB)

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 8.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

(B) POSITIONER TESTING

Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1:

Setting point (P, R and H pump)

Uact V : 3.100 CRT mm : 13.00 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10 Check value (P, R and H pump) Uact V : 1.700	(All P and R pumps not H and M pumps) Test with control rod in stop position Engine speed min-1: 60 Amplitude V : 1.4
CRT mm : 6.15 Tolerance mm : +/- 0.25 Check	tolerance V : +/- 1.20
tolerance mm : +/- 0.30	+ Engine speed min-1: 600 + Difference + Amplitude to
Setting point (in pump)	+ Amplitude V : max.1.4 +
Uact V : 3.100 CRT mm : 12.50 Tolerance mm : +/- 0.05 Check	(C) INJECTION PUMP WITH POSITIONER TEST POINT V!
tolerance mm : ÷/- 0.10 Check value	Rated speed rpm : 660 Uact V : 3.000
(M pump) Uact V : 1.700	Prestroke solenoid Stroke mm : 5.30 Del. quantity
CRT mm : 5.50 Tolerance mm : +/- 0.25 Check	cm3/1000 strokes : 359.0 Tolerance cm3/1000 strokes : +- 1.0
tolerance mm : +/- 0.30	+ Check tolerance + cm3/1000s. : +- 5.0
Stop position (P, R and H pump)	Spreed Tolerance cm3/1000 strokes : 8.0
Uact V : Value wit deenergised adjus and contr stop posi CRT mm : 0.75	ting magnet + cm3/1000s. : 11.0 pl rod in + FUEL DELIVERY CHARACTERISTICS
Tolerance mm : +/- 0.25 Check	Rated speed rpm : 950
tolerance mm : ± -0.35	TEST POINT L1
Stop position (M pump) Uact V : 0,720 Tolerance Volt : +- 0,065 CRT mm : 1,00	Rated speed rpm : 300 Uact V : 1.500 Tolerance Volt : +- 0.060 Check tolerance Volt : +- 0.060 Prestroke solenoid
Starting position (M pump) Uact V : 4,500	Stroke mm : 5.30 Del. quantity cm3/1000 strokes : 20.0
Tolerance Volt : + 0,115 CRT mm : 19,00 Tolerance mm : + 0,80	Tolerance cm3/1000 strokes : +- 2.0 Spreed

Tolerance cm3/1000 strokes :

5.0

Check tolerance cm3/1000s.

8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.01.97 Test oil : ISO 4113

Combination No. : 0 402 946 030

Injection pump

Pump designation : PES6P120A720RS8049

EP type number : 0 412 926 031

Governor

Governer design. : RQ750PA1299 Governer no. : 0 421 801 810

Cust. part No. : 1397781

Customer—spec. information Customer : SCANIA

Motor : DSC1158A

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 : +- 0.1 Tolerance bar

Tolerance l/h: \leftarrow 20.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

: 251.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65 Tolerance mm : +- 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm: 14.50 Tolerance mm : +- 1.50

Firing order : 1-5- 3- 6- 2-

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

: +- 0.75 tolerance "NW

Start of delivery blocking

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.15 Tolerance mm : + 0.05	<u> </u>
	CONTROL LEVER
Del. quantity cm3/1000 strokes : 363.0	control lever position degree : 22.0
Tolerance cm3/1000 strokes : +- 1.0	tolerance degree : +- 4.0 control lever
Check tolerance cm3/1000s. : +- 11.0	position degree : 83.0 tolerance degree : +- 4.0
Spreed	ASSEMBLY GOVERNOR SETTING
Tolerance cm3/1000 strokes : 8.0	Rated speed rpm : 750 rack travel mm : 12.10
Check tolerance : 12.0	Rated speed rpm : 778 Tolerance 1/min : +- 4
	† rack travel mm : 4.00 †
Rack travel in mm : 3.10 Tolerance mm : + 0.20	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 850
Del. quantity cm3/1000 strokes : 30.0	*
Tolerance	Rated speed rpm : 751
cm3/1000 strokes : +- 4.0 Check tolerance	+ rack travel mm : 12.10
cm3/1000S. : +- 6.0 Spreed Tolerance	Rated speed rpm : 779 Tolerance 1/min : + 4 rack travel mm : 4.00
cm3/1000 strokes : 5.0	+ rack travet iniv . 4.00
Check tolerance cm3/1000s. : 9.0	+ rack travel mm : 0.50 + Tolerance mm : +- 0.50 + Rated speed rpm : 850
(5) 0577710 05 7111577011 01115	+
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 752 rack travel mm : 12.10
	Rated speed rpm : 780
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Tolerance 1/min : +- 4 + rack travel mm : 4.00
Rated speed rpm : 700	}
Aneroid pressure hPa : 1500	+ rack travel mm : 0.50 + Tolerance mm : +- 0.50
Del. quantity cm3/1000 strokes : 363.0	Rated speed rpm : 850
Tolerance 505.0	+
cm3/1000 strokes : +- 1.0 Check tolerance	+ Rated speed rpm : 753 + rack travel mm : 12.10
cm3/1000s. : + 11.0	Rated speed rpm : 781
Spreed Tolerance	Tolerance 1/min : +- 4
cm3/1000 strokes : 8.0 Check tolerance	rack travel mm : 4.00
cm3/1000s 12.0	rack travel mm : 0.50

Tolerance mm: \leftarrow 0.50 Rated speed rpm : 850 Rated speed rpm : 754 rack travel mm : 12.10 Rated speed rpm : 782 Tolerance 1/min : +-4 rack travel mm : 4.00 rack travel mm : 0.50 Tolerance mm : \leftarrow 0.50 Rated speed rpm : 850 Rated speed rpm : 755 rack travel mm : 12.10 783 Rated speed rpm : Tolerance 1/min : + 4 rack travel mm 4.00

TORQUE CONTROL Rated speed rpm : 700 rack travel :mm : 13.15
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 Pressure hPa : 1500 13.15 rack travel mm : Tolerance mm : + 0.05

Rated speed rpm : 500 Pressure hPa : - rack travel mm : 7.80 : +- 0.20 Tolerance mm

MEASUREMENT

500 Rated speed rpm :

: 230 : 8.4 Pressure hPa rack travel mm 8.45 : +- 0.25 Tolerance mm

Pressure hPa : 580

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 230.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

: +- 7.0 cm3/1000s.

STARTING FUEL DELIVERY

Rated speed rpm : 100 Tolerance mm : +- 0.20

End of test specification sheet

K03

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.10.97 : ISO 4113

Combination No. : 0 402 946 030A

Injection pump

Pump designation : PESSP120A723RS8049 EP type number : 0 412 926 031

Governor

Governer design. : RQ750PA1299 Governer no. : 0 421 831 810

Cust. part No. : 1397783

Customer-spec. information Customer : SCANIA Motor : DSC1158A

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test cil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Tolerance l/h: + 20.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

251.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 14.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

		+ Rated speed rpm : 795
Rack travel in mm		+ guide steeve
Tolerance mm	: +- 0.05	travel mm : 10.00 Tolerance mm : +- 0.25
Del. quantity		T Total article min . += 0.25
cm3/1000 strokes	: 338.0	Rated speed rpm : 850 guide sleeve
Tolerance		+ travel mm : 11.50
cm3/1000 strokes	: ← 1.0	+ Tolerance mm : +- 0.50
Charle talaman		†
Check tolerance cm3/1000s.	: ← 10.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	1.20	Rated speed rpm : 850
Tolerance		+ Aneroid pressure + hPa : 1560
cm3/1000 strokes	: 8.0	Del. quantity
		- cm3/1000 strokes : 338.0
Check tolerance		+ Tolerance
cm3/1000s.	: 12.0	+ cm3/1000 strokes : +- 1.0
		<pre></pre>
		+ Spreed
		+ Tolerance
Rack travel in mm		+ cm3/1000 strokes : 8.0
Tolerance mm	: +- 0.20	+ Check tolerance
Del. quantity cm3/1000 strokes	: 30.0	+ cm3/1000s. : 12.0
Tolerance	. 55.5	1
cm3/1000 strokes	: +- 4.0	
Check tolerance		+ CONTROL LEVER
cm3/1000s. Spreed	: +- 6.0	t control lever
Tolerance		position degree : 28.0
cm3/1000 strokes	: 5.0	tolerance degree : +- 4.0
Check tolerance		+
cm3/1000s.	: 9.0	t control lever
		<pre>position degree : 89.0 tolerance degree : +- 4.0</pre>
(B) SETTING OF IN	JECTION PUMP	+ total alle degree
WITH GOVERNOR		+
		+ ASSEMBLY GOVERNOR SETTING
GUIDE SLEEVE TRAV	TC)	Pated speed rpm : 750
GOIDE STEENE IKWA		Rated speed rpm : 750 rack travel mm : 12.10
Rated speed rpm	: 758	+
guide sleeve		+ Rated speed rpm : 778
travel mm	: 4.98	+ Tolerance 1/min : +- 4
Tolerance mm	: +- 0.75	+ rack travel mm : 4.00
Rated speed rpm	: 480	rack travel mm : 0.50
guide sleeve		+ Tolerance mm : +- 0.50
travel mm	: 10.85	Rated speed rpm : 850
Tolerance mm	: +- 0.25	Ī
Rated speed rpm	: 840	Rated speed rpm : 751
auide sleeve		Rated speed rpm : 751 rack travel mm : 12.10
travel mm	: 18.50	+
Tolerance mm	: +- U.25	+ Rated speed rpm : 779 + Tolerance 1/min : +- 4
		+ Tolerance 1/min : +- 4

rack travel mm	: 4.00	†
rack travel mm Tolerance mm Rated speed rpm	: ← 0.50	ANEROID/ALTITUDE COMPENSATOR TEST
Rated speed rpm	: 752	SETTING
rack travel mm	: 12.10	Rated speed rpm : 500 Pressure hPa : 1500
Rated speed rpm Tolerance 1/min rack travel mm	: + 4	rack travel mm : 13.15 Tolerance mm : +- 0.05
rack travel mm Tolerance mm Rated speed rpm		Rated speed rpm : 500 Pressure hPa : - rack travel mm : 7.80 Tolerance mm : + 0.20
Rated Speed Ppiii	. 650	MEASUREMENT
Rated speed rpm rack travel mm	: 753 : 12.10	Rated speed rom : 500
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4	Pressure hPa : 230 rack travel mm : 8.45 Tolerance mm : +- 0.25
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 850	Pressure hPa : 580 rack travel mm : 10.45 Tolerance mm : + 0.05
Rated speed rpm rack travel mm		FUEL DELIVERY CHARACTERISTICS
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4	Aneroid pressure hPa : - Rated speed rpm : 500
rack travel mm Tolerance mm Rated speed rpm	: +- 0.50	Del. quantity cm3/1000 strokes : 230.0 Tolerance cm3/1000 strokes : +- 1.0
Rated speed rpm rack travel mm		Check tolerance cm3/1000s. : +- 7.0
Rated speed rpm Tolerance 1/min rack travel mm		STARTING FUEL DELIVERY
rack travel mm Tolerance mm Rated speed rpm	: - 0.50	Rated speed rpm : 100 Tolerance mm: : +- 0.20
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 13.15	End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 29.10.97 Edition : Iso 4113 Test oil

Combination No. : 0 403 476 152

Injection pump

Pump designation : PES6MW100/720/3RS120

: 5

EP type number : 0 413 406 195

Governor

Governer design. : RSV350...1250MWOA403

Governer no. : 0 420 085 299

Cust. part No. : 0280742702

Customer-spec. information Customer : MB-NFZ Motor : OM 366 LA : 185.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 3.25 Tolerance mm : +- 0.05 Check

tolerance mm : + 0.10

Rack travel in mm: 20.50 Tolerance mm : \leftarrow 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1230

Rack travel in mm : 15.30 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 122.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

: +- 3.0 cm3/1000s.

Spreed

K08

Tolerance cm3/1000 strokes : 3.5 Check tolerance	Check tolerance cm3/1000s. : 6.0
cm3/1000s. : 6.0	CONTROL LEVER
Rated speed rpm : 350	<pre>control lever position degree : 107.0 tolerance degree : +- 4.0</pre>
Rack travel in mm : 6.80 + Tolerance mm : + 0.30 + Del. quantity	RATED SPEED rack travel mm : 14.30
cm3/1000 strokes : 12.0 + Tolerance +	Rated speed rpm : 1285 Tolerance 1/min : + 5
cm3/1000 strokes : + 2.0 + Check tolerance +	rack travel mm : 4.00
cm3/1000s. : + 4.5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 +	Rated speed rpm : 1390 Tolerance 1/min : +- 5
cm3/1000 strokes : 3.5 Check tolerance	rack travel mm : 0.85 Tolerance mm : + 0.55
cm3/1000s. : 5.5	Rated speed rpm : 1490
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION	control lever position degree : 75.0 tolerance degree : +- 4.0
control lever position degree : -3 Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm : 0.65 + Tolerance mm : + 0.35 +	Rated speed rpm : 100 CRT mm min. : > 19.00
Tolerance mm : +- U.35 +- governor spring +-	Testing:
pre-tension	_
	Rated speed rpm : 350 rack travel mm : 6.80 Tclerance mm : +- 0.30
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00
Rated speed rpm : 1230 Aneroid pressure	Rated speed rpm : 410 Tolerance 1/min : +- 30
hPa : 1000 + Del. quantity +	
cm3/1000 strokes : 122.0 + Tolerance	TORQUE CONTROL Rated speed rpm : 1230
cm3/1000 strokes : + 1.0 + Check tolerance	rack travel mm : 15.30 Tolerance mm : + 0.05
cm3/1000s. : + 3.0 + Spreed	Rated speed rpm : 800
Tolerance cm3/1000 strokes : 3.5	rack travel mm : 15.30 Tolerance mm : +- 0.10
Т	

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	500
Pressure hPa	:	1000
rack travel mm	:	
Tolerance mm	:	← 0.05

Rated speed rpm	:	500
Pressure hPa	:	-
rack travel mm	:	10.2

Tolerance mm : \leftarrow 0.10

MEASUREMENT

Rated	speed	rpn	:	500
-------	-------	-----	---	-----

Pressure hPa	:		600
rack travel mm	:		13.70
Tolerance mm	:	+	0.15

Pressure hPa	•	300
rack travel mm	:	11.30
Tolerance mm	: -	─ 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid	pressure
	•

hPa	:	1000
Rated speed rpm	:	800
Del. quantity		
cm3/1000 strokes	:	122.

cm3/1000 strokes	:	122.0
Tolerance		

cm3/1000 strokes	: +-	1.5
Check tolerance		

cm3/1000s. : +- 4.0 Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance cm3/1000s.

7.0

Aneroid	pressure

hPa			•	_
Rated	speed r	pm	:	500
• 1				

Del. quantity

cm3/1000 strokes : 37.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.: ← 3.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		

cm3/1000 strokes : 115.0

Tolerance

cm3/1000 strokes : +- 5.0

Check tolerance

: +- 8.0 cm3/1000s.

LOW IDLE

Rated	speed	rom	350

Rack travel in mm Tolerance mm	: +-	6.80 0.30
Del. quantity cm3/1000 strokes	:	12.0
Tolerance cm3/1000 strokes	: +-	2.0

cm3/1000 strokes : +-Check tolerance cm3/1000s. : +-

4.5 Spreed Tolerance

cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 29.10.97 : ISO 4113

Combination No. : 0 400 866 070

Injection pump

Pump designation : PES6A90D320/3RS2464

EP type number : 0 410 896 029

Governor

Governer design. : RSV325...1500A2C529R

Governer no. : 0 420 233 189

Cust. part No. :

Customer-spec. information : MwM Customer

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

: 173.5

Tolerance bar : + 1.5

Test Lines : 0 680 750 014

Outside diameter : 6.0

x inside diameter:

x Length mm : 600

2.0

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.20 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check tolerance °NW

: +- 0.75

BASIC SETTING

Del. quantity

cm3/1000 strokes: 68.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s.

: +- 2.5

Spreed

Tolerance

cm3/1000 strokes :

3.0

Check tolerance

cm3/1000s.

: 4.5

Rated speed rpm : 325

+	Tolerance 1/min : +- 5
Rack travel in mm: 7.00 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 10.5 Tolerance cm3/1000 strokes: + 1.5 Check tolerance	rack travel mm : 4.00 Rated speed rpm : 1560 Tolerance 1/min : +- 15 rack travel mm : 0.85 Tolerance mm : +- 0.55
cm3/1000s. : + 3.5 Spreed Tolerance	Rated speed rpm : 1700 rack travel mm : 4.00
cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. : 4.5	Rated speed rpm : 1575 Tolerance 1/min : +- 15
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION	<pre>control lever position degree : 70.0 tolerance degree : +- 4.0</pre>
control lever position degree : -3 Rated speed rpm : 800	Setting point w/out bumper spring Rated speed rpm : 325 rack travel mm : 7.50
Rack travel in mm : 0.50 Tolerance mm : + 0.20	rack travel mm : 7.50 Tolerance mm : +- 0.10 Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 19.50
Rated speed rpm : 1480 Aneroid pressure hPa : - Del. quantity	Testing: Rated speed rpm : 325 rack travel mm : 7.00
cm3/1000 strokes : 68.0 + Tolerance +	Tolerance mm : +- 0.10
cm3/1000 strokes : +- 0.5 Check tolerance cm3/1000s. : +- 2.5 Spreed Tolerance	rack travel mm : 2.00 Rated speed rpm : 480 Tolerance 1/min : ÷- 30
cm3/1000 strokes : 3.0 + Check tolerance	
cm3/1000s. : 4.5	Start interlock
+	Rated speed rpm : > 100
control lever position degree : 108.0 tolerance degree : + 4.0	Check speed 1/min : > 80
RATED SPEED	STARTING FUEL DELIVERY
rack travel mm : 8.00 Rated speed rpm : 1525	Rated speed rpm : 100

rack travel mm Tolerance mm	:	+-	20.25 0.75
Del. quantity cm3/1000 strokes	:		118.0
Tolerance cm3/1000 strokes Check tolerance	:	+-	8.0
cm3/1000s.	:	+-	11.0

LOW IDLE

Rated speed rpm	:		325
Rack travel in mm	:		7.00
Tolerance mm	:	+	0.10
Del. quantity			
cm3/1000 strokes	:		10.5
Tolerance			
cm3/1000 strokes	:	+-	1.5
Check tolerance			
cm3/1000S.	•	+-	3.5
Spreed			
Tolerance			
cm3/1000 strokes	:		2.5
Check tolerance			
cm3/1000S.			4.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.10.97 Test oil : ISO 4113

Combination No. : 0 400 866 219

Injection pump

Pump designation : PES6A950120RS2860 EP type number : 0 410 896 889

Governor

Governer design. : RSV410...1050A0C2260

: -3R

Governer no. : 0 420 233 344

Cust. part No. : 32 82 684

Customer—spec. information Customer : CUMMINS Motor : 6 BT Power KW : 113.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.15
Tolerance mm : +- 0.05
Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-130-240

: -300

Tolerance : +- 0.50

Check

tolerance "NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 11.50 Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 10.90

Tolerance mm : +- 0.05	+ Rated speed rpm : 1050
Del. quantity cm3/1000 strokes : 97.0	Aneroid pressure hPa : 1100 Del. quantity
Tolerance	cm3/1000 strokes : 97.0 Tolerance
cm3/1000 strokes : +- 1.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance
Check tolerance cm3/1000s. : +- 3.0	cm3/1000s. : + 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 3.5 Check tolerance
Tolerance : 3.5 cm3/109C strokes : 3.5	cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	CONTROL LEVER
Rated speed rpm : 425	control lever position degree : 90.0 tolerance degree : +- 4.0
Rack travel in mm : 6.95	+ RATED SPEED
Tolerance mm : +- 0.10 Dec. quantity	+ rack travel mm : 9.90 + Rated speed rpm : 1095
cm3/1000 strokes : 16.8 Tolerance	Tolerance 1/min : + 5
$cm3/1000$ strokes : \leftarrow 2.0	rack travel mm : 4.00
Check tolerance cm3/100CS. : +- 4.5 Spreed	Rated speed rpm : 1140 + Tolerance 1/min : + 15
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5 Check tolerance	+ Tolerance mm : +- 0.55 + Rated speed rpm : 1330
cm3/1000s. : 9.0	+ rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ Rated speed rpm : 1175 + Tolerance 1/min : +- 15 +
	+
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : - 3 Rated speed rpm : 800	control lever position degree : 70.0 tolerance degree : + 4.0
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring	+ Rated speed rpm : 425 + rack travel mm : 5.95
pre-tension click setting x : 1.75	Tolerance mm : +- 0.10
	Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 19.50

Testing:		+	Rated speed rpm	: 450
Rated speed rpm	: 425 : 6.95	Ŧ	Del. quantity cm3/1000 strokes Tolerance	: 98.0
rack travel mm Tolerance mm	: + 0.10	-	cm3/1000 strokes Check tolerance	: +- 1.0
rack travel mm Rated speed rpm	: 590	Į Į	cm3/1000s.	: +- 3.0
Tolerance 1/min	: +- 30		Aneroid pressure hPa	: -
TORQUE CONTROL Rated speed rpm rack travel mm	: 1050 : 10.90	†	Rated speed rpm Del. quantity cm3/1000 strokes	
Toterance mm	: ← 0.05	+	Tolerance cm3/1000 strokes	
Rated speed rpm rack travel mm Tolerance mm	: 11.80	} } †	Check tolerance cm3/1000s.	: +- 3.0
Rated speed rpm rack travel mm Tolerance mm	: 11.50	‡ ‡	STARTING FUEL DEL	LVERY
	. + 0.10	 	Rated speed rpm rack travel mm Tolerance mm	: 100 : 14.00 : +- 0.20
ANEROID/ALTITUDE COMPENSATOR TEST		+	Tolerance mm Del. quantity cm3/1000 strokes	
SETTING		+	Tolerance cm3/1000 strokes	: +- 7.5
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1100 : 11.80	+++++++++++++++++++++++++++++++++++++++	Sheck tolerance cm3/1000s.	: +- 10.0
Rated speed rpm Pressure hPa	: 500 : -	+	LOW IDLE	
rack travel mm Tolerance mm	: 9.80 : +- 0.10	‡	Rated speed rpm	: 425
MEASUREMENT		+	Rack travel in mm Tolerance mm Del. quantity	
Rated speed rpm		1	cm3/1000 strokes Tolerance	
Pressure hPa rack travel mm Tolerance mm	: 420 : 10.10	+	cm3/1000 strokes Check tolerance cm3/1000s.	
Pressure hPa		I	Spreed Tolerance	. ** 4.5
rack travel mm	: 10.95	 	cm3/1000 strokes Check tolerance	: 5.5
		+	cm3/1000s.	: 9.0
FUEL DELIVERY CHA	ARACTERISTICS	+		
Aneroid pressure hPa	: 1100	+++++++++++++++++++++++++++++++++++++++	End of test specia	fication sheet

K16

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 30.10.97

Test oil

: ISO 4113

Combination No. : 0 402 076 755

Injection pump

Pump designation : PES6P110A320LS3318

EP type number : 0 412 016 741

Governor

Governer design. : RSV350...750P4A561

Governer no. : 0 421 833 406

Cust. part No. : 1820271092

Customer-spec. information Customer : NAVISTAR Motor : DTA-466 Power KW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet

: 40

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8 Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

REMARKS

x inside diameter: 3.0

x length mm :

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 3.00 Tolerance mm : +- 0.05

600

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5- 3- 6- 2-

: 4

Phasing

: **0-60-120-180-240** . u-60 : -300

: +- 0.50

Tolerance

Check

tolerance *NW

: +- 0.75

Start of delivery blocking

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.65

Tolerance mm : $\leftarrow 0.05$

Del. quantity

cm3/1000 strokes : 241.5

K17

Tolerance cm3/1000 strokes : ÷- 1.0	Tolerance cm3/1000 strokes : +- 1.0 Check tole: ance
Check tolerance cm3/1000s. : + 3.0	cm3/1000s. : + 3.0 Spreed
Spreed	+ Tolerance + cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	theck tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000S. : 6.5	CONTROL LEVER
	+ control lever
Rated speed rpm : 350	position degree : 94.0 tolerance degree : +- 4.0
Rack travel in mm: 5.70 Tolerance mm: : + 0.19 Del. quantity	RATED SPEED + rack travel mm : 11.80 + Rated speed rpm : 755
cm3/1000 strokes : 40.0 Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5	rack travel mm : 4.00 Rated speed rpm : 795 Tolerance 1/min : +- 5
Spreed Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 8.0 Check tolerance	Tolerance mm : +- 0.55 Rated speed rpm : 900
cm3/1000s. : 12.0	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 800 Tolerance 1/min : + 5
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : - 3 Rated speed rpm : 800	control lever position degree : 74.0 tolerance degree : +- 4.0
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Setting point w/out bumper spring
governor spring	Rated speed rpm : 100
pre-tension click setting x : 2.50	CRT mm min. : > 19.00
FILL LOAD DELTHEOV AT FILL LOAD OTTO	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 700	Rated speed rpm : 350 rack travel mm : 5.70 Tolerance mm : +- 0.10
Aneroid pressure hPa : - Del. quantity	TORQUE CONTROL
cm3/1000 strokes : 241.5	Rated speed rpm : 700

rack travel mm : 13.65 Tolerance mm : + 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity

cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes : \leftarrow 20.0

Check tolerance

cm3/1000s. : \leftarrow 25.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm: 5.70
Tolerance mm: + 0.10
Del. quantity

cm3/1000 strokes : 40.0

Tolerance

cm3/1000 strokes : + 2.0
Check tolerance

cm3/1000s. : ← 4.5 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 31.10.97 Test oil : ISO 4113

Combination No. : 0 402 034 700AA

Injection pump

Pump designation : PES4P120B120RS3379 EP type number : 0 412 024 702

Governor

Governer design. : RQV475...1100PA1314K

Governer no. : 0 421 815 543

Cust. part No. : 3284266

Customer-spec. information Customer : CDC Motor : 4BTA-A Power KW : 93.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. *C : 40
Tolerance *C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : +- 0.05 Check tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 6.00 Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm : 11.65 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 139.0

K20

Tolerance cm3/1000 strokes : + 1.0	guide sleeve travel mm : 13.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : +- 4.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	Rated speed rpm : 1130
Tolerance cm3/1000 strokes : 8.0	Aneroid pressure hPa : 1200 Del. quantity
Check tolerance cm3/1000s. : 12.0	cm3/1000 strokes : 139.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Rated speed rpm : 475	cm3/1000s. : +- 4.0 Spreed Tolerance
Rack travel in mm: 5.40 Tolerance mm: : + 0.10 Del. quantity cm3/1000 strokes: 17.0 Tolerance	cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 5.0 Spreed	CONTROL LEVER control lever
Tolerance + cm3/1000 strokes : 4.0 + Check tolerance +	position degree : 112.0 tolerance degree : +- 4.0
cm3/1000s. : 8.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR	RATED SPEED rack travel mm : 10.70 Rated speed rpm : 1170 Tolerance 1/min : +- 15 rack travel mm : 6.60
GUIDE SLEEVE TRAVEL	Rated speed rpm : 1245 Tolerance 1/min : +- 5
Rated speed rpm : 1163 guide sleeve travel mm : 7.66 Tolerance mm : + 0.15	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1400
Rated speed rpm : 475 guide sleeve travel mm : 1.59 Tolerance mm : +- 0.20	LOW IDLE
Rated speed rpm : 931 guide sleeve travel mm : 5.89 Tolerance mm : + 0.25	<pre>control lever position degree : 71.0 tolerance degree : +- 4.0</pre>
Rated speed rpm : 670 guide sleeve travel mm : 3.53	Control lever difference Grad : 41.0 tolerance degree : +- 6.0
Tolerance mm : + 0.25	Setting point w/out bumper spring
Rated speed rpm : 1660	Rated speed rpm : 400

		+ Check
CRT mm min.	: > 6.40	speed 1/min :> 80 Check
Testing:		speed 1/min : < 385
Rated speed rpm	: 475	
ack travel mm Olerance mm	: 5.40	FUEL DELIVERY CHARACTERISTICS
olerance mm	: ← 0.10	
Rated speed rpm	: 550	Aneroid pressure
		hPa : 1200
ORQUE CONTROL		Rated speed rpm : 750
lated speed rpm	: 1130	+ Del. quantity + cm3/1000 strokes : 144.5
ack travel mm	: 11.65	Tolerance
olerance mm	: + 0.05	- cm3/1000 strokes : + 3.0
		- Check tolerance
ated speed rpm	: 750	+ cm3/1000s. : +- 6.0
ack travel mm olerance mm	: 11.50	+ Spreed
olerance mm	: +- 0.20	Tolerance
lated cased are	• 400	+ cm3/1000 strokes : 8.0
lated speed rpm rack travel mm		+ Check tolerance + cm3/1000s. : 12.0
olerance mm		T (11157 (1000). : 12.0
- COT GITTO IMI		
		Aneroid pressure
NEROID/ALTITUDE		hBo
OMPENSATOR TEST		Rated speed rpm : 500
		+ Del. quantity
TTT TNC		t cm3/1000 strokes : 91.0
ETTING		+ Tolerance + cm3/1000 strokes : +- 1.0
ated speed rpm	. 500	+ Check tolerance
ressure hPa	: 1200	- cm3/1000s. : +- 3.0
ack travel mm	: 10.90	
ack travel mm olerance mm	: + 0.10	+
ated speed rpm	: 500	+ STARTING FUEL DELIVERY
ressure hPa	: -	STATE OF SELECTION
ack travel mm	9.40	Rated speed rpm : 100
olerance mm	: + 0.20	rack travel mm : 21.00
		Tolerance mm : +- 0.50
EASUREMENT		+ Del. quantity
تعدد التعديم المحاسم	. 500	+ cm3/1000 strokes : 169.0
ated speed rpm	: 500	+ Tolerance + cm3/1000 strokes : +- 20.0
ressure hPa	: 600	Check tolerance
ack travel mm	: 10.40	- cm3/1000s. : +- 25.0
olerance mm	: +- 0.20	+
		+
ressure hPa	: 500	+
ack travel mm	: 9.80	+
olerance mm	: ← 0.20	+ LOW IDLE
		Rated speed rpm : 475
tart interlock		+
	400	+ Rack travel in mm : 5.40
ated speed rpm	: > 100	+ Tolerance mm : +- 0.10
ated speed rpm	: < 375	+ Del. quantity + cm3/1000 strokes : 17.0

Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000S.	: +-	5.0
Spreed		
Tolerance		
cm3/1000 strokes	:	4.0
Check tolerance		
cm3/1000s.	:	8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.10.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 646 680

Injection pump

Pump designation : PE6P120A320RS7447 EP type number : 0 412 626 970

Governor

Governer design. : RQ275/1150PA1361 Governer no. : 0 421 801 825

Cust. part No. : 1329586

Customer—spec. information

Customer : DAF
Motor : GS 200-RQ
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 150 Tolerance l/h : + 20.0

Test nozzle holde assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 11.70 Tolerance mm : \leftarrow 0.50

Firing order : 1-5- 3- 6- 2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.70 Tolerance mm : +- 0.05

	+ guide sleeve
Del. quantity	+ travel mm : 4.47
cm3/1000 strokes : 178.0	+ Tolerance mm : + 0.10
	+
Tolerance	+ Rated speed rpm : 440
cm3/1000 strokes : $+$ 1.0	† guide sleeve
	travel mm : 6.00
Check tolerance	Tolerance mm : + 0.10
cm3/1000s. : +- 4.0	47/0
0	+ Rated speed rpm : 1360
Spreed	+ guide sleeve
Tolerance	travel mm : 11.50 Tolerance mm : + 0.50
cm3/109C strokes : 5.0	† Tolerance mm : + 0.50
CIBY TOOK SCHOKES . D.O	
Check tolerance	GUIDE SLEEVE POSITION
cm3/1000s. : 9.0	-
	Rated speed rpm : 600
	+
	+ Rack travel in mm : 16.00
Rated speed rpm : 275	+ Tolerance mm : +- 0.40
	+
Rack travel in mm: 5.05	
Tolerance mm : +- 0.10	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity	1000
cm3/1000 strokes : 24.0	Rated speed rpm : 1000
Tolerance cm3/1000 strokes : +- 3.0	+ Aneroid pressure + hPa : 1000
Check tolerance	+ Del. quantity
cm3/100Qs. : +- 6.0	+ cm3/1000 strokes : 178.0
Spreed	+ Tolerance
Tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000 strokes : 8.0	+ Check tolerance
Check tolerance	+ cm3/1000s. : +- 4.0
cm3/1000s. : 12.0	+ Spreed
	+ Tolerance
	+ cm3/1000 strokes : 5.0
(B) SETTING OF INJECTION PUMP	† Check tolerance
WITH GOVERNOR	+ cm3/1000s. : 9.0
	+
CHARLES TRAVEL	†
GUIDE SLEEVE TRAVEL	+ CONTROL LEVER
Rated speed rpm : 1205	CONTROL LEVER
guide sleeve	control lever
travel mm : 6.49	position degree : 99.0
Tolerance mm : + 0.15	tolerance degree : +- 4.0
	+
Rated speed rpm : 275	+ RATED SPEED
guide sleeve	+ rack travel mm : 10.70
travel mm : 1.97	+ Rated speed rpm : 1202
Tolerance mm : +- 0.20	+ Tolerance 1/min : +- 8
4450	†
Rated speed rpm : 1150	rack travel mm : 4.00
guide sleeve	Rated speed rpm : 1280
travel mm : 6.00 Tolerance mm : + 0.10	+ Tolerance 1/min : +- 15
Tolerance mm : + 0.10	rack travel mm : 0.70
Rated speed rpm : 356	Tolerance mm : +- 0.70
Transportation . USG	Rated speed rpm : 1450
	and the contract of the contra

LOW IDLE

control lever

position degree : 73.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm :

CRT mm min. :> 6.40

Testing:

275 Rated speed rpm 5.05 rack travel mm : + 0.10Tolerance mm

rack travel mm : 2.00 Rated speed rpm 355 Tolerance 1/min : +-20

TORQUE CONTROL

: 1000 Rated speed rpm rack travel mm : 11.70 : +- 0.05 Tolerance mm

Rated speed rpm : 1150 rack travel mm : 11.70 : +- 0.10 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm 600 Pressure hPa 1000 rack travel mm 11.70 : +- 0.05 Tolerance mm

600 Rated speed rpm Pressure hPa rack travel mm 6.70 Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 600

Pressure hPa 220 rack travel mm 10.50 Tolerance mm : \leftarrow 0.05

Pressure hPa 100 : rack travel mm 8.10 Tolerance mm : +- 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 101.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 4.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.05 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 24.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s.: +-6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s.12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.10.97 Test oil : ISO 4113

Combination No. : 0 402 678 840

Injection pump

Pump designation : PE8P120A720LS7446 EP type number : 0 412 628 931

Governor

Governer design. : RSV350...1100P8A652

: -1

Governer no. : 0 421 833 570

Cust. part No. : 1411028

Customer-spec. information
Customer : SCANIA
Motor : DSI1468M

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45
Tolerance mm : +- 0.05
Check

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-2-7-3-4-

: 5- 6- 8

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : + 0.30

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : \leftarrow 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700	Rated speed rpm : 700 Aneroid pressure
Rack travel in mm: 14.15	hPa : 1500
Tolerance mm : + 0.05	Del. quantity cm3/1000 strokes : 279.0 Tolerance
Del. quantity cm3/1000 strokes : 279.0	cm3/1000 strokes : + 1.0 Check tolerance
Tolerance	cm3/1000s. : +- 4.0 Spreed
cm3/1000 strokes : + 1.0	Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000s. : +- 4.0	Check tolerance cm3/1000S. : 12.0
Spreed	
Tolerance cm3/1000 strokes : 8.0	CONTROL LEVER
+	control lever
Check tolerance cm3/1000s. : 12.0	position degree : 108.0 tolerance degree : +- 4.0
	RATED SPEED
+	rack travel mm : 13.15
Rated speed rpm : 350	Rated speed rpm : 1145
Rack travel in mm: 5.80 +	Tolerance 1/min : +- 5 Check
Tolerance mm : + 0.10 Del. quantity	speed 1/min : +- 10
cm3/1000 strokes : 42.0	rack travel mm : 4.00
Tolerance	Rated speed rpm : 1235
cm3/1000 strokes : + 3.0	Tolerance 1/min : + 15
Check tolerance + 6.0 +	Check speed 1/min : +- 20
Spreed	Speed Militi
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 4.0	Tolerance mm : \leftarrow 0.55
Check tolerance	Rated speed rpm : 1400
cm3/1000s. : 8.0	rack travel mm : 4.00
I	Rated speed rpm : 1265
(B) SETTING OF INJECTION PUMP	Tolerance 1/min : + 15
WITH GOVERNOR	Check
‡	speed 1/min : ← 20
GUIDE SLEEVE POSITION	
‡	LOW IDLE
control lever	100 - 17
position degree : -3	
+	control lever
governor spring	position degree : 76.0 tolerance degree : + 4.0
pre-tension tick setting x : 6.00	Lucerance degree . — 4.0
	Setting point w/out bumper spring
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 350
+	rack travel mm : 5.30

Tolerance mm	: +- 0.10
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.80 : + 0.10
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 14.15 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 14.15 : +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 14.15 : +- 0.05
Rated speed rpm Pressure hPa Tolerance mm	: 500 : - : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 360 : 9.70 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 840 : 12.45 : ← 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 1500 : 1100 : 241.0
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 4.0 : +- 6.0

Aneroid pressure			
hPa	:		-
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		173.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000s.	:	+-	4.0

LOW IDLE		
Rated speed rpm	:	350
. 0 20. 41.100 111111	: : +-	5.80 0.10
Del. quantity cm3/1000 strokes Tolerance	:	42.0
cm3/1000 strokes	: +-	3.0
cm3/1000s. Spreed	: +-	6.0
Tolerance cm3/1000 strokes Check tolerance	:	4.0
cm3/1000s.	:	8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 04.11.97 Edition Test oil : ISO 4113

Combination No. : 0 402 796 041

Injection pump

Pump designation : PES6H110/320RS19 EP type number : 0 412 716 006

Governor

Governer design. : RE36

Governer no. : 0 421 890 374

Cust. part No. : 8192870 PO4 v.07/97

Customer-spec. information

Customer : VOLVO-TRUCK

: D7C Motor : 228.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4(EHAB)

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 600 x length mm :

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +-1.0

Prestroke mm 8.00 : + - 0.05Tolerance mm Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : +- 0.50

: 1-5-3-6-2 Firing order

: - 4

Phasing : 0-60-120-180-240

: -30C

Tolerance : + - 0.30

Check

tolerance °NW : +- 0.75

(B) POSITIONER TESTING

Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point (P, R and H pump)

Uact V : 3.100 CRT mm : 13.00 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10 Check value (P, R and H pump) Uact V : 1.700	ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps) Test with control rod in stop position Engine speed min-1: 60 Amplitude V : 1.4 Tolerance V : +/- 0.6
CRT mm : 6.15 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30	tolerance V : +/- 1.20 Engine speed min-1: 600
Setting point	+ Difference + Amplitude to + Amplitude V : max.1.4
(dimuq M)	+
Uact V : 3.100 CRT mm : 12.50 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10	(C) INJECTION PUMP WITH POSITIONER TEST POINT V1
Check value (M pump)	Rated speed rpm : 660 + Uact V : 3.000 + Prestroke solenoid + Stroke mm : 5.30
Uact V : 1.700 CRT mm : 5.50 Tolerance mm : +/- 0.25 Check	<pre>Del. quantity cm3/1000 strokes : 359.0 Tolerance cm3/1000 strokes : +- 1.0</pre>
tolerance mm : +/- 0.30 Stop position (P, R and H pump)	Check tolerance cm3/1000S. : +- 5.0 Spreed Tolerance
Uact V: Value with deenergised adjusting magnet and control rod in stop position.	cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 11.0 FUEL DELIVERY CHARACTERISTICS
CRT mm : 0.75 Tolerance mm : +/- 0.25 Check	Rated speed rpm : 950
tolerance mm : +/- 0.35	TEST POINT L1
Stop position (M pump) Uact V : 0,720 Tolerance Volt : + 0,065 CRT mm : 1,00	Rated speed rpm : 300 Uact V : 1.570 Tolerance Volt : +- 0.060 Check tolerance Volt : +- 0.060 Prestroke solenoid
Starting position (M pump) Uact V : 4,500 Tolerance Volt : +- 0,115	Stroke mm : 5.30 Del. quantity cm3/1000 strokes : 20.0 Tolerance
CRT mm : 19,00 Tolerance mm : + 0,80	+ cm3/1000 strokes : +- 2.0 + Spreed

Tolerance cm3/1000 strokes : 5.0

Check tolerance cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 03,11,97 : ISO 4113

Combination No. : 0 402 946 030

Injection pump

Pump designation : PES6P120A720RS8049 EP type number : 0 412 926 031

Governor

Governer design. : RQ750PA1299 Governer no. : 0 421 801 810

Cust. part No. : 1397781

Customer-spec. information Customer : SCANIA Motor : DSC1158A

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

: 40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Tolerance l/h: \leftarrow 20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

: 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm: 14.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

		1	
Rack travel in mm Tolerance mm	: 13.15 : +- 0.05	CONTROL LEVER	
Del. quantity cm3/1000 strokes	: 363.0	control lever	: 22.0
Tolerance cm3/1000 strokes	: + 1.0	tolerance degree	
Check tolerance cm3/1000s.	: + 11.0	position degree tolerance degree	: 83.0 : + 4.0
Spreed		ACCEMBLY COLUEDNOS	CETTAIC
Tolerance cm3/1000 strokes	: 8.0	+ ASSEMBLY GOVERNOR + Rated speed rpm	: 750
Check tolerance		+ rack travel mm +	: 12.10
cm3/1000s.	: 12.0	Rated speed rpm Tolerance 1/min rack travel mm	: 778 : + 4 : 4.00
Rack travel in mm Tolerance mm	3.10 : + 0.20	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 850
Del. quantity cm3/1000 strokes	: 30.0	‡	
Tolerance cm3/1000 strokes Check tolerance	: +- 4.C	Rated speed rpm	: 751 : 12.10
cm3/1000s. Spreed	: +- 6.0	Rated speed rpm Tolerance 1/min	: 779 : + 4
Tolerance cm3/1000 strokes Check tolerance	: 5.0	rack travel mm rack travel mm	: 4.00 : 0.50
cm3/1000s.	: 9.0	Tolerance mm Rated speed rpm	: +- 0.50 : 850
(B) SETTING OF IN	JECTION PUMP	Parked and desired and	. 752
WITH GOVERNOR		Raited speed rpm rack travel mm	: 752 : 12.10
	Y AT FULL LOAD STOP	Rated speed rpm Tolerance 1/min rack travel mm	: 780 : +- 4 : 4.00
Rated speed rpm Aneroid pressure	: 700	rack travel mm	: 0.50
hPa Del. quantity	: 1500	Tolerance mm Rated speed rpm	: +- 0.50 : 850
cm3/1000 strokes Tolerance		†	707
cm3/1000 strokes Check tolerance cm3/1000s.	: + 1.0 : + 11.0	+ Rated speed rpm + rack travel mm	: 753 : 12.10
Spreed Tolerance		Rated speed rpm Tolerance 1/min	
cm3/1000 strokes Check tolerance	: 8.0	rack travel mm	: 4.00
cm3/1000s.	: 12.0	rack travel mm	: 0.50

Tolerance mm : \leftarrow 0.50 Rated speed rpm : 850 Rated speed rpm : 754 rack travel mm : 12.10 782 Rated speed rpm : Tolerance 1/min : +-4 rack travel mm : 4.00 rack travel mm : 0.50Tolerance mm : + 0.50 Rated speed rpm : 850 Rated speed rpm : 755 rack travel mm : 12.10 Rated speed rpm : 783 Tolerance 1/min : + 4 rack travel mm : 4.00 rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

TORQUE CONTROL
Rated speed rpm : 700
rack travel mm : 13.15
Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.15
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : rack travel mm : 7.80
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 230 rack travel mm : 8.45 Tolerance mm : + 0.25

Pressure hPa : 580

rack travel mm : 10.45Tolerance mm : $\leftarrow 0.05$

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa

: 500

Rated speed rpm :

500

Del. quantity

cm3/1000 strokes : 230.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Tolerance mm : +- 0.20

End of test specification sheet

L07

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 04.11.97 : ISO 4113

Combination No. : 0 403 474 021

Injection pump

Pump designation : PES4MW100/720RS1181

EP type number : 0 413 404 107

Severnor

Governer design. : RSV400...1000MW1A348

Governer no. : 0 420 085 183

Cust. part No. : 9880882

Customer-spec. information

Customer : LIEBHERR Motor

: D924T-E A2

Power KW

120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 3.05 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1- 3- 4- 2

: 0-90-180-270 : +- 0.50 Phasing

Tolerance

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 890

Rack travel in mm : 13.20

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 177.0

Tolerance

cm3/1000 strokes : \leftarrow 1.0

Check tolerance

cm3/1000s.

: +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 4.0

-	+		
Check tolerance cm3/1000s. :	7.5	CONTROL LEVER	
~		control lever	
	+	position degree	
Rated speed rpm :	550 +	tolerance degree	: +- 4.0
Rack travel in mm :	4.50	RATED SPEED	
Tolerance mm :		rack travel mm	: 12.20
Del. quantity	+	Rated speed rpm	
cm3/1000 strokes : Tolerance	25.0	Tolerance 1/min	: +- 5
cm3/1000 strokes :	+ 2.0	rack travel mm	: 4.00
Check tolerance	+	Rated speed rpm	: 980
cm3/1000s. :	+ 4.5	Tolerance 1/min	: +- 10
Spreed Tolerance	†	rack travel mm	: 1.00
cm3/1000 strokes :	3.5		
Check tolerance	+	Tolerance mm Rated speed rpm	: 1100
cm3/1000s. :	5.0		
	+	rack travel mm	
(B) SETTING OF INJECT	TTON PLIMP I	Rated speed rpm Tolerance 1/min	
WITH GOVERNOR	12014 1 0111	rocerance mini	. 10
	+		
	†		
GUIDE SLEEVE POSITIO	N I	LOW IDLE	
	+		
a surfaced the same	+		
control lever position degree :	- 3 +	control lever position degree	: 78.0
	800	tolerance degree	
	+	_	
Rack travel in mm : Tolerance mm :		Setting point w/o	ut bumper spring
roterance num :	- 0.33	Rated speed rpm	: 550
governor spring	+	rack travel mm	
pre-tension	+	Tolerance mm	: +- 0.10
click setting x :	3.75	Data dama ada ama	. 100
	I	Rated speed rpm	: 100
FULL LOAD DELIVERY A	T FULL LOAD STOP	CRT mm min.	: > 19.00
	+	- . •	
Rated speed rpm : Aneroid pressure	890	Testing:	
hPa :	1250	Rated speed rpm	: 550
Del. quantity	+	rack travel mm	
cm3/1000 strokes :	177.0	Tolerance mm	: +- 0.20
Tolerance cm3/1000 strokes :	+ 1.0		
Check tolerance	·	TORQUE CONTROL	
cm3/1000s. :	← 4.0 ∔	Rated speed rpm	: 890
Spreed	+	rack travel mm	
Tolerance cm3/1000 strokes :	<u>1</u>	Tolerance mm	: +- 0.05
TRANSPORT STRAKES	4.0	Total area min	
	4.0		
Check tolerance cm3/1000s. :	7.5	Rated speed rpm rack travel mm	: 500 : 13.20
Check tolerance	Ì	Rated speed rpm	: 500 : 13.20

Rated speed rpm rack travel mm Tolerance mm	:	+	600 13.20 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	<i>55</i> 0
Pressure hPa	:	1250
rack travel mm	:	13.20
Tolerance mm	: 4	− 0.05

Rated speed rpm	:	550
Pressure hPa	:	~
rack travel mm	:	11.50
Tolerance mm	: +	- 0.05

MEASUREMENT

Rated	speed	rpm	:	550
-------	-------	-----	---	-----

Pressure hPa	:	560
rack travel mm	:	11.90
Tolerance mm	: +	- 0.05

Pressure hPa	:	650
rack travel mm	:	12.80
Tolerance mm	; +	- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	1250
Rated speed rpm	:	<i>5</i> 00
Del. quantity		
cm3/1000 strokes	:	178.0
Tolerance		
cm3/1000 strokes	: +	- 2.0
Check tolerance		
cm3/1000s.	; +	- 5.0
Spreed		
Tolerance		
cm3/1000 strokes	:	6.0
Check tolerance		
cm3/1000s.	:	9.0

, n, to, o , a, p, tooa, o	Aneroid	pressure
----------------------------	---------	----------

Milerord biessure		
hPa	:	1250
Rated speed rpm	:	600
Del. quantity		
7/4000		400.0

cm3/1000 strokes : 180.0

Tolerance cm3/1000 strokes	: +-	2.0
Check tolerance cm3/1000s.	: +-	5.0

Aneroid pressure		
hPa	:	_
Rated speed rpm	:	550
Del. quantity		
cm3/1000 strckes	:	149.0
Tolerance		
cm3/1000 strokes		← 1.0

Check tolerance cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated, rack must reach start position in max. control lever setting.

Rated speed rpm	:		100
rack travel mm	:		20.00
Tolerance mm	:	+-	1.00
Del. quantity			
cm3/1000 strokes	:		135.0
Tolerance			
cm3/1000 strokes	:	+-	5.0
Check tolerance			
cm3/1000s		+	8.0

LOW IDLE

Rated speed rpm	:		550
Rack travel in mm Tolerance mm Del. quantity	:	+-	4.50 0.20
cm3/1000 strokes Tolerance	:		25.0
cm3/1000 strokes	:	+-	2.0
Check tolerance cm3/1000S. Spreed	:	+	4.5
Tolerance cm3/1000 strokes	:		3.5
Check tolerance cm3/1000s.	:		5.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 04.11.97 : ISO 4113

Combination No. : 0 403 476 126

Injection pump

Pump designation : PES6MW100/320RS1132

EP type number : 0 413 406 124

Governor

Governer design. : RSV300...1050MW4A352

Governer no. : 0 420 085 201

Cust. part No. :

Customer-spec. information

Customer : VME

Motor

: TD 61

Power KW

: 122.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : +- 1.0

Prestroke mm : 2.95 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.15

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 93.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0	Check tolerance cm3/1000s. : +- 3.0
Spreed	- Spreed - Tolerance
Tolerance - cm3/1000 strokes : 3.5 -	- cm3/1000 strokes : 3.5 - Check tolerance - cm3/1000S. : 6.0
Check tolerance cm3/1000s. : 6.0	
	CONTROL LEVER
Rated speed rpm : 300	control lever position degree : 120.0 tolerance degree : +- 4.0
Rack travel in mm: 6.10 Tolerance mm: + 0.10	RATED SPEED
Del. quantity cm5/1000 strokes : 14.0 Tolerance	rack travel mm : 10.10 Rated speed rpm : 1075 Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0 Check tolerance	rack travel mm : 4.00
cm3/1000s. : +- 4.5 Spreed Tolerance	Rated speed rpm : 1125 - Tolerance 1/min : +- 15
cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.5	rack travel mm : 1.00 Tolerance mm : +- 0.70 Rated speed rpm : 1250
cm3/1000s. : 5.5	 -
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	- rack travel mm : 4.00 - Rated speed rpm : 1135 - Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	
control lever	
position degree : - 3 Rated speed rpm : 800	- control lever - position degree : 80.0 - tolerance degree : +- 4.0
Rack travel in mm : 0.65 Tolerance mm : + 0.35	Setting point w/out bumper spring
governor spring pre-tension	Rated speed rpm : 300 rack travel mm : 5.60
click setting x : 4.20 -	Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 100 CRT mm min. :> 19.00
Rated speed rpm : 1000 - Aneroid pressure -	Testing:
hPa : 1000 - Del. quantity - cm3/1000 strokes : 93.0 -	- Rated speed rpm : 300 - rack travel mm : 6.10
Tolerance : +- 1.0	rack travel mm : 6.10 Tolerance mm : +- 0.10
1	+

TORQUE CONTROL Rated speed rpm : 1000

rack travel mm : 11.15 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000 Pressure hPa : 1000 rack travel mm 11.15

Tolerance mm

: +- 0.05

Rated speed rpm : Pressure hPa rack travel mm : 10.05

1000

Tolerance mm

: +- 0.05

MEASUREMENT

Rated speed rpm : 1000

160 Pressure hPa : rack travel mm : 10.80 Tolerance mm : **←** 0.10

: 100 Pressure hPa rack travel mm : 10.35 : + 0.05 Tolerance mm

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa

Rated speed rpm : 1000

Del. quantity

cm3/1000 strokes : 78.0 Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.

: -- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 strokes : + 5.0

Check tolerance cm3/1000s. : +- 8.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.10 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 14.0

Tolerance cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000s. Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. 5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 29.01.97 : ISO 4113

Combination No. : 9 400 087 498

Injection pump

Pump designation : PES6P12OA12ORS3344

EP type number : 9 400 087 090

Governor

Governer design. : RQV350...1100PA1216

Governer no. : 9 420 080 380

Cust. part No. : 3355978

Customer-spec. information

Customer : CUMMINS

Motor

: 6 CTAA - 250

Power KW

: 184.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

Tolerance °C : +-

2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 3.0

Test nozzle holde

assembly

: 1 688 901 019

Opening pressure

bar

208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.15 Tolerance mm : +- 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 15.50

Tolerance mm : \leftarrow 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50 Tolerance : +- 0.10

Check

tolerance °NW : +- 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.55

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 184.5	+ Tolerance mm : + 0.25 + Rated speed rpm : 1400
Tolerance cm3/1000 strokes : + 1.0	guide steeve travel mm : 10.55 Tolerance mm : + 0.25
Check tolerance cm3/1000s. : + 4.0	GUIDE SLEEVE POSITION
Spreed	<u>†</u>
Tolerance cm3/1900 strokes : 5.0	control lever position degree : - 1 Rated speed rpm : 1150
Check tolerance cm3/1000s. 9.0	Rack travel in mm : 16.50 Tolerance mm : +- 1.30
Rated speed rpm : 325	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 6.40 Tolerance mm : + 0.10 Del. quantity	Rated speed rpm : 1100 Aneroid pressure hPa : 1000
cm3/1000 strokes : 44.0 Tolerance cm3/1000 strokes : + 3.0	Del. quantity cm3/1000 strokes : 184.5 Tolerance
Check tolerance cm3/1000s. : +- 6.0	cm3/1000 strokes : +- 1.0 Check tolerance
Spreed Tolerance cm3/1000 strokes : 8.0	+ cm3/1000s. : +- 4.0 + Spreed + Tolerance
Check tolerance cm3/1000s. : 12.0	cm3/1000 strokes : 5.0 Check tolerance
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ cm3/1000s. : 9.0
	+ CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
Rated speed rpm : 650 guide sleeve	<pre>position degree : 63.0 tolerance degree : +- 4.0</pre>
travel mm : 5.55 Tolerance mm : + 0.25	control lever position degree : 117.0 tolerance degree : +- 4.0
Rated speed rpm : 1150 guide sleeve travel mm : 8.40	+ RATED SPEED
travel mm : 8.40 Tolerance mm : + 0.10	+ rack travel mm : 13.50 + Rated speed rpm : 1155 + Tolerance 1/min : +- 5
Rated speed rpm : 350 guide sleeve travel mm : 1.55	+ rack travel mm : 4.00 + Rated speed rpm : 1350
Tolerance mm : + 0.25	Tolerance 1/min : +- 15
Rated speed rpm : 500 guide sleeve travel mm : 4.05	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1500
CLAVEC HMI	1 Marea Speed (pill . 1900

	<u>†</u>	Tolerance mm	: + 0.15
LOW IDLE		Pressure hPa rack travel mm Tolerance mm	: 530 : 0.30 : + 0.10
control lever position degree tolerance degree		Start interlock Rated speed rpm Rated speed rpm	
control lever position degree tolerance degree		Check speed 1/min Check	: > 80
Setting point w/ou	t bumper spring	speed 1/min	: < 275
Rated speed rpm CRT mm min.	: 100 : > 9.50	FUEL DELIVERY CHA	ARACTERISTICS
Testing: Rated speed rpm rack travel mm Tolerance mm	: 325 : 6.40 : + 0.10	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	
Rated speed rpm	: 375	cm3/1000 strokes Check tolerance cm3/1000s.	: + 2.0 : + 5.0
rack travel mm Tolerance mm Rated speed rpm rack travel mm	: 1100 : 14.55 : + 0.05 : 700 : 14.55 : + 0.05	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: - : 500 : 144.0
ANEROID/ALTITUDE COMPENSATOR TEST	+	cm3/1000s.	: +- 4.0
SETTING	<u>‡</u>	STARTING FUEL DEL	IVERY
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1000 : 14.55 : ← 0.05	Rated speed rpm rack travel mm Tolerance mm Del. quantity	: 100 : 20.00 : + 1.00
Rated speed rpm Pressure hPa MEASUREMENT	: 500	cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
	: 500		
	: 680 : 0.85	LOW IDLE	

Rated speed rpm	:		325
Rack travel in mm Tolerance mm Del. quantity	:	+	6.40 0.10
cm3/1000 strokes Tolerance	:		44.0
cm3/1000 strokes	:	+-	3.0
Check tolerance cm3/1000s. Spreed	:	+-	6.0
Tolerance cm3/1000 strokes Check tolerance	:		8.0
cm3/1000s.	:		12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.11.97 : ISO 4113

Combination No. : 0 402 076 777

Injection pump

Pump designation : PES6P120A720RS3352

EP type number : 0 412 026 780

Governor

Governer design. : RSV400...1100P2A599

Governer no. : 0 421 833 478

Cust. part No. : RE62647

Customer-spec. information Customer : DEERE

Motor : 6081HN002 Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar $: \leftarrow 1.0$

Prestroke mm 3.60 : + - 0.05Tolerance mm

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : **←** 0.75

Start of delivery mark

*NW after s.o.d. : 9.25 : +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel

14.00

Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100	<pre>governor spring pre-tension click setting x :</pre>
Rack travel in mm : 12.40 Tolerance mm : + 0.05	FULL LOAD DELIVERY A
Del. quantity cm3/1000 strokes : 159.5	Rated speed rpm : Aneroid pressure hPa :
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes :
Check tolerance cm3/1000s. : + 3.0	cm3/1000 strokes : Check tolerance cm3/1000s.
Spreed	Spreed Tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000 strokes : Check tolerance cm3/1000s. :
Check tolerance cm3/1000s. : 6.5	<u> </u>
	CONTROL LEVER
Rated speed rpm : 400	control lever position degree :
Rack travel in mm: 5.20 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 19.0 Tolerance cm3/1000 strckes: + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes: 6.0 Check tolerance cm3/1000 strokes: 8.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR	tolerance degree: RATED SPEED rack travel mm: Rated speed rpm: Tolerance 1/min: rack travel mm: Rated speed rpm: Tolerance 1/min: rack travel mm: Rated speed rpm: Tolerance mm: Rated speed rpm: Rated speed rpm: Tolerance mm: Rated speed rpm: Tolerance 1/min:
GUIDE SLEEVE POSITION	
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20	LOW IDLE control lever position degree : tolerance degree : Setting point w/out l

FULL LOAD DELTHED	V AT EILL LOAN STOD
	Y AT FULL LOAD STOP
Rated speed rpm	: 1100
Aneroid pressure	4500
hPa	: 1500
Del. quantity	450 5
cm3/1000 strokes	: 159.5
Tolerance	1 0
cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000S.	: +- 3.0
Spreed	: 3.0
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	. 4.0
cm3/1000s.	: 6.5
0.110000	. 0.3
CONTROL LEVER	
control lever	
position degree	: 94.0
tolerance degree	
RATED SPEED	
rack travel mm	: 11.40
Rated speed rpm	: 1150
Tolerance 1/min	: +- 5
	: 4.00
rack travel mm	
Rated speed rpm Tolerance 1/min	: 1215 : +- 5
TOTE TAILE TAILET	• • •
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1350
rack travel mm	: 4.00
Rated speed rpm	: 1215
Tolerance 1/min	: + 15
101. 701.	
LOW IDLE	
control lover	
control lever	: 70.0
position degree tolerance degree	
coterance degree	. +- 4.0
Setting point w/o	ut bumper spring
	-
Rated speed rpm	: 400

3.50

rack travel mm Tolerance mm	: 4.70 : + 0.10
Rated speed rpm	: 100
CRT mm min.	: > 19.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 400 : 5.20 : ← 0.10
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1100 : 12.40 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 650 : 13.50 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1500
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 800 : - : 10.10 : +- 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 920 : 12.70 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 490 : 11.10 : +- 0.05
Start interlock	
Rated speed rpm	: > 100

Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 650 : 191.0 : + 2.0 : + 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 800 : 104.0 : + 2.0 : + 4.0
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	IVERY : 100 : 20.50 : +- 0.50 : 105.0 : +- 20.0 : +- 25.0
LOW IDLE Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	
	: +- 4.5

FUEL DELIVERY CHARACTERISTICS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.11.97 : ISO 4113

Combination No. : 0 402 076 780

Injection pump

Pump designation : PES6P120A720RS3352

EP type number : 0 412 026 780

Governor

Governer design. : RSV400...900P4A606

Governer no. : 0 421 833 490

Cust. part No. : RE62644

Customer-spec. information Customer : DEERE

Motor

: 6081AF001

Power KW

: 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde

assembly

: 1 688 901 103

Opening pressure

bar

208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

3.60 Prestroke mm : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Start of delivery mark

*NW after s.o.d. : 7.00 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no.

: 1

Beginning of delivery differende

and maximum rack

14.00 travel Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm :

800

+	
Rack travel in mm: 13.90 + Tolerance mm: +- 0.05 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 219.5	Rated speed rpm : 800 Aneroid pressure
Tolerance cm3/1000 strokes : + 1.0	hPa : - Del. quantity cm3/1000 strokes : 219.5
Check tolerance cm3/1000s. : +- 3.0	Tolerance cm3/1000 strokes : +- 1.0 Check_tolerance
Spreed	cm3/1000s. ; +- 3.0 Spreed Tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000 strokes : 4.0 Check tolerance cm3/1000S. : 6.5
Check tolerance cm3/1000s. : 6.5	. 0.9
 <u>‡</u>	CONTROL LEVER
Rated speed rpm : 400 Rack travel in mm : 5.65	control lever position degree : 100.0
Rack travel in mm: 5.65 Tolerance mm: + 0.10 Del. quantity	tolerance degree : +- 4.0 RATED SPEED
cm3/1000 strokes : 25.5 Tolerance cm3/1000 strokes : +- 3.0	rack travel mm : 12.90 Rated speed rpm : 910 Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : +- 5.0 Spread Tolerance	rack travel mm : 4.00 Rated speed rpm : 950 Tolerance 1/min : +- 5
cm3/1000 strokes : 6.0 Check tolerance	rack travel mm : 0.85
cm3/1000s. : 8.0	Tolerance mm : +- 0.55 Rated speed rpm : 1020
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 970 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	
control lever	LOW IDLE
position degree : -3 Rated speed rpm : 800	control lever position degree : 77.0
Rack travel in mm: 0.50 Tolerance mm: + 0.20	tolerance degree : +- 4.0 Setting point w/out bumper spring
governor spring pre-tension click setting x : 4.75	Rated speed rpm : 400 rack travel mm : 5.15 Tolerance mm : +- 0.10

L24

Rated speed rpm 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm 400 5.65 rack travel mm : + 0.10 Tolerance mm

TORQUE CONTROL

Rated speed rpm 800 rack travel mm 13.90 Tolerance mm : + 0.05

Start interlock

100 Rated speed rpm : >

Check

speed 1/min : > 80

STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance

cm3/1000S. : +- 25.0

LOW IDLE

400 Rated speed rpm :

5.65 Rack travel in mm: Tolerance mm 0.10

Del. quantity

25.5 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000S.5.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

8.0 cm3/1000S.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.11.97 : ISO 4113

Combination No. : 9 400 030 720

Injection pump

Pump designation : PES6A95D32D/3RS2895

EP type number : 9 410 037 238

Governor

Governer design. : RSV475...1250A0C833R

Governer no. : 9 420 034 703

Cust. part No. : 3928595

Customer-spec. information : CDC Customer

Motor

: 687A

Power KW

: 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

208.5

Tolerance bar

: + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.70 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 9.00 Tolerance : \leftarrow 0.50

Check

tolerance °NW : +- 0.75

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.75

Tolerance mm : +- 0.05	+ Rated speed rpm : 1250 + Aneroid pressure
Del. quantity cm3/1000 strokes : 108.0	+ hPa : 900 + Del. quantity
	+ cm3/1000 strokes : 108.0
Tolerance cm3/1000 strokes : +- 1.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : + 3.0	- cm3/1000s. : +- 3.0 - Spreed
Spreed	Tolerance cm3/1000 strokes : 3.5 Check tolerance
Tolerance cm3/1000 strokes : 3.5	cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.8	CONTROL LEVER
Rated speed rpm : 475	+ control lever + position degree : 112.0 + tolerance degree : + 4.0
,	+
Rack travel in mm : 5.50 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 17.5	RATED SPEED rack travel mm : 11.70 Rated speed rpm : 1325 Tolerance 1/min : +- 5
Tolerance	
cm3/1000 strokes : + 2.0	rack travel mm : 5.50
Check tolerance cm3/1000s. : +- 4.5 Spreed	+ Rated speed rpm : 1395 + Tolerance 1/min : + 5 +
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 3.5 Check tolerance	Tolerance mm : +- 0.55 Rated speed rpm : 1480
cm3/1000s. : 5.5	t rack travel mm : 5.50
	+ Rated speed rpm : 1395
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	+ LOW IDLE
control lever	t control lever
position degree : - 3	position degree : 85.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Control lever difference Grad : 27.0
governor spring	tolerance degree : +- 4.0
pre-tension click setting x : 5.00	+ Setting point w/out bumper spring
	Rated speed rpm : 475 rack travel mm : 5.00
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10

100 Rated speed rpm

: > 19.00 CRT mm min.

Testina:

475 Rated speed rpm 5.50 rack travel mm : + - 0.10Tolerance mm

TORQUE CONTROL

1250 Rated speed rpm 12.75 rack travel mm : + 0.05Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

500 Rated speed rpm 900 Pressure hPa

500 Rated speed rpm Pressure hPa : 10.70 rack travel mm : + 0.10Tolerance mm

MEASUREMENT

Rated speed rpm 500

480 Pressure hPa 12.20 rack travel mm : + - 0.20Tolerance mm

350 Pressure hPa 11.70 rack travel mm : + - 0.20Tolerance mm

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 500 Rated speed rpm Del. quantity cm3/1000 strokes : 72.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

: +-3.0 cm3/1000s.

STARTING FUEL DELIVERY

Rated speed rpm 100 20.50 rack travel mm : + 0.50Tolerance mm

Del. quantity

cm3/1000 strokes : 120.5

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : + 15.0

LOW IDLE

475 Rated speed rpm

Rack travel in mm : 5.50 : + 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 17.5

Tolerance cm3/1000 strokes : +-2.0

Check tolerance cm3/1000s. : +-4.5

Spreed Tolerance

cm3/1000 strokes : 3.5 Check tolerance

cm3/1000s.

5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.11.97 : ISO 4113

Combination No. : 9 400 030 734

Injection pump

Pump designation : PES4A95D320/3RS2880

EP type number : 9 410 037 214

Governor

Governer design. : RSV500...1100A0C847R

Governer no. : 9 420 034 713

Cust. part No. : 3930153

Customer-spec. information Customer : CDC

Motor

: 48T3.9

Power KW

: 74.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

: 40

Tolerance $^{\circ}$ C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 17.0

Tolerance bar : + 1.0

Prestroke mm : 2.45 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Start of delivery blocking

 $^{\circ}$ NW after s.o.d. : 7.50

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 109.5

Tolerance + 1.0	Tolerance : +- 1.0
Check tolerance cm3/1000s. : + 3.0	- Check tolerance - cm3/1000s. : +- 3.0 - Spreed
Spreed	Tolerance cm3/1000 strokes : 3.5
Tolerance cm3/1000 strokes : 3.5	- Check tolerance - cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	- CONTROL LEVER
Rated speed rpm : 500	control lever position degree : 101.0 tolerance degree : +- 4.0
Rack travel in mm: 5.65 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 20.5	RATED SPEED rack travel mm : 11.70 Rated speed rpm : 1165 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed	rack travel mm : 6.00 Rated speed rpm : 1230 Tolerance 1/min : +- 5
Tolerance cm3/1000s: 3.5 Check tolerance cm3/1000s: 5.5	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1375
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION	control lever position degree : 81.0 tolerance degree : +- 4.0
control lever position degree : - 3 Rated speed rpm : 800	Control lever difference Grad: 20.0 tolerance degree: +- 4.0
Rack travel in mm : 0.50 Tolerance mm : +- 0.20	Setting point w/out bumper spring
governor spring pre-tension	Rated speed rpm : 500 rack travel mm : 5.15 Tolerance mm : + 0.10
click setting x : 3.25	Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 19.00
Rated speed rpm : 1100 Aneroid pressure	Testing:
hPa : 1000 Del. quantity cm3/1000 strokes : 109.5	Rated speed rpm : 500 rack travel mm : 5.65 Tolerance mm : +- 0.10

TORQUE CONTROL Rated speed rpm : 1100 rack travel mm : 12.75 Tolerance mm : +- 0.05 Rated speed rpm : 750 rack travel mm : 13.70
Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING 750 Rated speed rpm : Pressure hPa 1000 Rated speed rpm : 750 Pressure hPa : -: 12.75 rack travel mm Tolerance mm : + 0.10 **MEASUREMENT** Rated speed rpm : 750 Pressure hPa : 650 rack travel mm : 13.50 Tolerance mm : + 0.20 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1000 Rated speed rpm 750 Del. quantity cm3/1000 strokes : 123.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance : +- 4.0 cm3/1000s. Aneroid pressure hPa 750 Rated speed rpm : Del. quantity cm3/1000 strokes : 110.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance

: +-

3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 122.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance

cm3/1000s. : +- 15.0

LOW IDLE

Rated speed rpm : 500 Rack travel in mm : 5.65 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 20.5 Tolerance cm3/1000 strokes : +- 2.0Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 5.5

End of test specification sheet

cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 10.11.97 Edition Test oil : ISO 4113

Combination No. : 9 400 030 734GA

Injection pump

Pump designation : PES4A95D320/3RS2880 EP type number : 9 410 037 214

Governor

Governer design. : RSV500...1100A00847R

Governer no. : 9 420 034 713

Cust. part No. : 3933290

Customer-spec. information : CDC Customer : 4BT3.9 Motor Power KW : 74.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

: 2.45 : + 0.05 Prestroke mm Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 : +- 1.50 Tolerance mm

Firing order : 1-3-4-2

: 0-90-180-270 : +- 0.50 Phasing

Tolerance

Check

tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.75 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 109.5	+ Aneroid pressure + hPa : 1000 + Del. quantity
Tolerance cm3/1000 strokes : + 1.0	cm3/1000 strokes : 109.5
Check tolerance	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : + 3.0	+ cm3/1000s. : + 3.0 + Spreed
Spreed	+ Tolerance + cm3/1000 strokes : 3.5
Tolerance cm3/1000 strokes : 3.5	+ Check tolerance + cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	
	+ CONTROL LEVER
Rated speed rpm : 500	<pre>control lever position degree : 101.0 tolerance degree : + 4.0</pre>
Rack travel in mm : 5.65	toterance degree : 4.0
Tolerance mm : + 0.10	RATED SPEED
Del. quantity	rack travel mm : 11.70
cm3/1000 strokes : 20.5 Tolerance	+ Rated speed rpm : 1165 + Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	Tolerance 1/min : +- 5
Check tolerance	rack travel mm : 6.00
cm3/1000s. : +- 4.5 Spreed	+ Rated speed rpm : 1230 + Tolerance 1/min : +- 5
Tolerance	+
cm3/1000 strokes : 3.5	rack travel mm : 0.85
Check tolerance cm3/1000s. : 5.5	+ Tolerance mm : + 0.55 + Rated speed rpm : 1375
CIID/10003	+ Rated speed rpm : 1375
	rack travel mm : 6.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1230
WITH GOVERNOR	Tolerance 1/min : +- 15
	†
CUIDE OF EERE DOCATION	+
GUIDE SLEEVE POSITION	LOW IDLE
	+
control lever	+
position degree : - 3 Rated speed rpm : 800	control lever position degree : 81.0
Rated Speed Phil . 600	tolerance degree : +- 4.0
Rack travel in mm: 0.50	+
Tolerance mm : +- 0.20	Control lever difference
	+ Grad : 20.0
governor spring pre-tension	+ tolerance degree : +- 6.0
click setting x : 5.00	Setting point w/out bumper spring
	† + Rated speed rpm : 500
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 5.15
Dated aread are a 1100	Tolerance mm : +- 0.10
Rated speed rpm : 1100	t Rated speed rpm : 100

CRT mm min.	: > 19.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 500 : 5.65 : + 0.10
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1100 : 12.75 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.70 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 750 : 1000
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 750 : − : 11.90 : ← 0.10
MEASUREMENT	
Rated speed rpm	: 750
Pressure hPa rack travel mm Tolerance mm	: 440 : 12.40 : + 0.20
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1000 : 750 : 123.5 : +- 2.0
cm3/1000s.	: +- 4.0
Aneroid pressure hPa	: -

Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : +- : +-	750 96.5 1.0 3.0
STARTING FUEL DEL	IVERY	

STARTING FUEL DEL	.IVERY
Rated speed rpm rack travel mm	: 100 : 20.50
Tolerance mm	: +- 0.50
Del. quantity cm3/1000 strokes	: 122.0
Tolerance cm3/1000 strokes	: +- 10.0
Check tolerance cm3/1000s.	: + 15.0

LOW IDLE			
Rated speed rpm	:		500
Rack travel in mm Tolerance mm Del. quantity	:	+	5.65 0.10
cm3/1000 strokes Tolerance	:		20.5
cm3/1000 strokes Check tolerance	:	+-	2.0
cm3/1000s. Spreed Tolerance	:	+-	4.5
cm3/1000 strokes Check tolerance	:		3.5
cm3/1000s.	:		5.5

M06

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 07.11.97

Test oil

: ISO 4113

Combination No. : 0 402 074 700A

Injection pump

Pump designation : PES4P110B720RS3383

EP type number : 0 412 014 701

Governor

Governer design. : R3V300...1100P1A667

Governer no. : 0 421 833 582

Cust. part No. : 9880216

Customer-spec. information

Customer : LIEBHERR

Motor : D 924 TI-E A2 Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

Tolerance °C

2.0

Overflow valve : 1 417 413 049

Inlet press. bar :

1.5

Tolerance bar : +- 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 207.0

Tolerance bar

: +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter:

2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.20
Tolerance mm : + 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 4-2-1-3

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 4

BASIC SETTING

Rated speed rpm : 880

Rack travel in mm : 13.85

Tolerance mm : +- 0.05 ______

Del. quantity

cm3/1000 strokes : 203.0

Tolerance	+	Spreed
cm3/1000 strokes :	← 1.0 ∔	Tolerance
	1	cm3/1000 strokes : 4.0
Check tolerance		Check tolerance
	+ 3.5 I	
CIID7 10003.	T 3.7	cm3/1000s. : 7.5
_	 †	
Spreed	†	
	+	
Tolerance	+	CONTROL LEVER
cm3/1000 strokes :	4.0	
	1	control lever
Check tolerance		position degree : 94.0
cm3/1000s. :	7.5	tolerance degree : +- 4.0
CIII37 10003.	T	toterance degree . 1- 4.0
		DATED COCCO
	†	RATED SPEED
	+	rack travel mm : 12.85
Rated speed rpm :	500 +	Rated speed rpm : 920
	+	Tolerance 1/min : +- 5
Rack travel in mm :	4.60	
Tolerance mm :		rack travel mm : 4.00
Del. quantity	1	Rated speed rpm : 990
cm3/1000 strokes :	24.0	Tolerance 1/min : +- 15
Tolerance	T	TO COLUMN TO THE TOTAL THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO T
cm3/1000 strokes :	. 70	mark through the
	T 3.0	rack travel mm : 0.85
Check tolerance		Tolerance mm : + 0.55
	+ 5.5 +	Rated speed rpm : 1200
Spreed	+	
Tolerance	+	rack travel mm : 4.00
cm3/1000 strokes :	4.5	Rated speed rpm : 1000
Check tolerance	+	Tolerance 1/min : +- 15
cm3/1000s. :	7.5	
	1	
	\perp	
(B) SETTING OF INJECT	TION PLIMP	
WITH GOVERNOR		LOW IDLE
WITH GOVERNOR	Ţ	COM INCL
	Ţ	
		control lever
CUIDE OF FEVE DOCUTION	T	
GUIDE SLEEVE POSITION	N †	position degree : 83.0
	+	tolerance degree : +- 4.0
	+	
control lever	+	Setting point w/out bumper spring
position degree :	- 3 +	
	+	Rated speed rpm : 500
governor spring	+	rack travel mm : 2.80
pre-tension	1	Tolerance mm : +- 0.10
click setting x :	5.00	
CLICK SELLING A		
ctrck setting x .	1	Testing:
		Testing:
		-
FULL LOAD DELIVERY A		Rated speed rpm : 500
FULL LOAD DELIVERY A	T FULL LOAD STOP	Rated speed rpm : 500 rack travel mm : 4.60
FULL LOAD DELIVERY A	T FULL LOAD STOP	Rated speed rpm : 500
FULL LOAD DELIVERY AT Rated speed rpm : Aneroid pressure	T FULL LOAD STOP	Rated speed rpm : 500 rack travel mm : 4.60 Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT Rated speed rpm : Aneroid pressure hPa :	T FULL LOAD STOP	Rated speed rpm : 500 rack travel mm : 4.60 Tolerance mm : +- 0.10 rack travel mm : 2.00
FULL LOAD DELIVERY AT Rated speed rpm : Aneroid pressure hPa : Del. quantity	T FULL LOAD STOP 880 1500	Rated speed rpm : 500 rack travel mm : 4.60 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 595
FULL LOAD DELIVERY A Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes :	T FULL LOAD STOP 880 1500	Rated speed rpm : 500 rack travel mm : 4.60 Tolerance mm : +- 0.10 rack travel mm : 2.00
FULL LOAD DELIVERY AT Rated speed rpm : Aneroid pressure hPa : Del. quantity	T FULL LOAD STOP 880 1500	Rated speed rpm : 500 rack travel mm : 4.60 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 595
FULL LOAD DELIVERY A' Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes :	T FULL LOAD STOP 880 1500 203.0	Rated speed rpm : 500 rack travel mm : 4.60 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 595
FULL LOAD DELIVERY AT Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes :	T FULL LOAD STOP 880 1500 203.0	Rated speed rpm : 500 rack travel mm : 4.60 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : +- 50
FULL LOAD DELIVERY AT Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance	T FULL LOAD STOP 880 1500 203.0 +- 1.0	Rated speed rpm : 500 rack travel mm : 4.60 Tolerance mm : +- 0.10 rack travel mm : 2.00 Rated speed rpm : 595

rack travel mm : 13.85 Tolerance mm : +- 0.05	+ Del. quantity + cm3/1000 strokes : 216.0
, , , , , , , , , , , , , , , , , , , ,	+ Tolerance
Rated speed rpm : 500	+ cm3/1000 strokes : +- 3.0
rack travel mm : 13.90	+ Check tolerance
Tolerance mm : +- 0.10	cm3/1000s. : +- 6.0
Rated speed rpm : 700	
rack travel mm : 13.90 Tolerance mm : + 0.10	+ Aneroid pressure
Tolerance mm : + U.10	† hPa : -
	Rated speed rpm : 500 Del. quantity
ANEROID/ALTITUDE	+ cm3/1000 strokes : 170.0
COMPENSATOR TEST	+ Tolerance
	+ cm3/1000 strokes : + 1.0
	+ Check tolerance
SETTING	+ cm3/1000s. : +- 3.5
Data desard and 500	†
Rated speed rpm : 500	†
rack travel mm · 13.85	STARTING FUEL DELIVERY
Rated speed rpm : 500 Pressure hPa : 1500 rack travel mm : 13.85 Tolerance mm : + 0.10	JAKIINO TOEL DELIVERY
	Rated speed rpm : 100
Rated speed rpm : 500	rack travel mm : 20.50
Pressure hPa : -	Tolerance mm : + 0.50
rack travel mm : 11.25	+ Del. quantity
Tolerance mm : + 0.20	+ cm3/1000 strokes : 155.0
MEASUREMENT	+ Tolerance
MEASUREMENT	+ cm3/1000 strokes : + 15.0 + Check tolerance
Rated speed rpm : 500	- cm3/1000s. : +- 19.0
The second secon	+
Pressure hPa : 830	+
rack travel mm : 13.20	+
Tolerance mm : +- 0.05	LOUIZOLE
Pressure hPa : 750	+ LOW IDLE
rack travel mm : 11.90	Rated speed rpm : 500
Tolerance mm : + 0.10	Traced operation
	Rack travel in mm: 4.60
	Tolerance mm : +- 0.10
FUEL DELIVERY CHARACTERISTICS	+ cm3/1000 strokes : 24.0
	+ Tolerance - cm3/1000 strokes : +- 3.0
Aneroid pressure	+ Check tolerance
hPa : 1500	+ cm3/1000s. : +- 5.5
Rated speed rpm : 500	Spreed
Del. quantity	+ Tolerance
cm3/1000 strokes : 230.0	+ cm3/1000 strokes : 4.5
Tolerance	+ Check tolerance
cm3/1000 strokes : + 3.0	+ cm3/1000s. : 7.5
Check tolerance	†
$cm3/1000s.$: \leftarrow 6.0	I
Aneroid pressure	+
hPa : 1500	+ End of test specification sheet
Rated speed rpm : 700	†
	+

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 19.09.97

: 19.09.97

Combination No. : 0 402 074 7000

Injection pump

Pump designation : PES4P110B720RS3383

EP type number : 0 412 014 701

Governor

Governer design. : RSV300...1100F1A667

Governer no. : 0 421 833 582

Cust. part No. : 9882855

Customer-spec. information

Customer : LIEBHERR
Motor : D 924 TI-E A2
Power KW : 137.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 40 Temp. C: 40 Tolerance C: + 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Tolerance l/h: \leftarrow 10.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 207.0 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.20 Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.00 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 172.0

M10

Tolerance	+ Spreed
cm3/1000 strokes : +- 1.0	+ Tolerance
	+ cm3/1000 strokes : 4.0
Check tolerance	+ Check tolerance
cm3/1000s. : +- 3.5	+ cm3/1000s. : 7.5
	1.5
Spreed	
opi ced	
Tolerance	T CONTROL LEVER
cm3/1000 strokes : 4.0	T CONTROL LEVER
CIID/ 1000 Sti 0kes . 4.0	T control lavor
Charl. Aslamana	t control lever
Check tolerance	+ position degree : 103.0
cm3/1000s. : 7.5	tolerance degree : + 4.0
N= 177 Page 1971 - 1971	4
	+ RATED SPEED
	† rack travel mm : 11.00
Rated speed rpm : 400	+ Rated speed rpm : 1030
	† Tolerance 1/min : +- 5
Rack travel in mm: 4.00	+
Tolerance mm : +- 0.10	† rack travel mm : 4.00
Del. quantity	+ Rated speed rpm : 1090
cm3/1000 strokes : 20.0	+ Tolerance 1/min : + 10
Tolerance	1
cm3/1000 strokes : +- 3.0	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1095
cm3/1000s. : +- 5.5	+ Tolerance 1/min : + 10
Spreed	
Tolerance	
cm3/1000 strokes : 4.5	
Check tolerance	
CHECK CHECKICE	-
	LOU TO 5
cm3/1000s. : 7.5	+ LOW IDLE
	LOW IDLE
cm3/1000s. : 7.5	‡
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP	+ control lever
cm3/1000s. : 7.5	control lever position degree : 78.0
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP	+ control lever
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP	control lever position degree : 78.0 tolerance degree : +- 4.0
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 78.0
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00
cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension click setting x : 4.00	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : 4.00 Tolerance mm : 4.00 Tolerance mm : 4.00
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension click setting x : 4.00 FULL LOAD DELIVERY AT FULL LOAD STOP	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : 4.00 Tolerance mm : 4.00 Tolerance mm : +- 0.10
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension click setting x : 4.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : +- 0.10 Tolerance mm : +- 0.10
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension click setting x : 4.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Ameroid pressure	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : +- 0.10 TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 12.00
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension click setting x : 4.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1370	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : +- 0.10 Tolerance mm : +- 0.10
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension click setting x : 4.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1370 Del. quantity	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : +- 0.10 TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 12.00 Tolerance mm : +- 0.05
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension click setting x : 4.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1370 Del. quantity cm3/1000 strokes : 172.0	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : +- 0.10 TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 12.00 Tolerance mm : +- 0.05 Rated speed rpm : 500
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension click setting x : 4.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1370 Del. quantity cm3/1000 strokes : 172.0 Tolerance	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : +- 0.10 TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 12.00 Tolerance mm : +- 0.05 Rated speed rpm : 500 rack travel mm : 500 rack travel mm : 12.00
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension click setting x : 4.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1370 Del. quantity cm3/1000 strokes : 172.0 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : +- 0.10 TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 12.00 Tolerance mm : +- 0.05 Rated speed rpm : 500
Cm3/1000s. : 7.5 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 governor spring pre-tension click setting x : 4.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1370 Del. quantity cm3/1000 strokes : 172.0 Tolerance	control lever position degree : 78.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 400 rack travel mm : 3.80 Tolerance mm : +- 0.10 Testing: Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : +- 0.10 TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 12.00 Tolerance mm : +- 0.05 Rated speed rpm : 500 rack travel mm : 500 rack travel mm : 12.00

rack travel mm Tolerance mm	: 12.00 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1370 : 12.00 : ← 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 10.95 : +- 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 750 : 11.75 : +- 0.05
Pressure hPa rack travel mm Tolerance mm	: 670 : 11.25 : + 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1370 : 500 : 196.0 : + 3.0 : + 6.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	

Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : : +-	500 174.0 1.0 3.5	
STARTING FUEL DEL	IVERY		
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +-	100 20.50 0.50 155.0 15.0 19.0	
LOW IDLE			
Rated speed rpm	:	400	
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +-	4.00 0.10 20.0 3.0 5.5 4.5 7.5	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 07.11.97 Edition Edition : U7.11.97 Test oil : ISO 4113

Combination No. : 0 402 646 7858

Injection pump

Pump designation : PE6P120A320LS7869 EP type number : 0 412 626 887

Governor

Governer design. : RQV300...1050PA1078K

Governer no. : 0 421 815 359

Cust. part No. : 9880968

Customer-spec. information Customer : LIEBHERR

: D 9406 TI-EA3 : 300.0 Motor

Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 4
Tolerance °C : +-2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity min. l/h : 165
Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-6-3-5-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +~ 0.50 Tolerance

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 12.65

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 305.0

Tolerance

cm3/1000 strokes : \leftarrow 1.0

Check tolerance cm3/1000s.	: +- 4.0	Rated speed rpm : 470
Spreed		_ + guide sleeve + travel mm : 3.64
·		Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes	: 5.0	+ Rated speed rpm : 1330 - guide sleeve
Check tolerance cm3/1000s.	: 9.0	travel mm : 13.50 Tolerance mm : + 0.50
	Martin Colonia de Caracteria d	- †
		GUIDE SLEEVE POSITION
Rated speed rpm	: 300	1
Rack travel in mo	n: 3.90	control lever
Tolerance mm	: + 0.10	position degree : - 1
Del. quantity cm3/1000 strokes	: 13.0	+ Rated speed rpm : 1191
Tolerance	. 13.0	Rack travel in mm : 68.25
cm3/1000 strokes Check tolerance	: + 3.0	Tolerance mm : +- 1.30
cm3/1000s.	: + 6.0	
Spreed		FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes	: 6.0	Rated speed rpm : 950
Check tolerance		+ Aneroid pressure
cm3/1000s.	: 10.0	hPa : 1400
		+ Del. quantity + cm3/1000 strokes : 305.0
(B) SETTING OF IN	NJECTION PUMP	† Tolerance
WITH GOVERNOR		+ cm3/1000 strokes : +- 1.0 + Check tolerance
		+ cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAN	VEL.	+ Spreed
Pated speed nom	. 1117	Tolerance 5.0
Rated speed rpm guide sleeve	: 1117	cm3/1000 strokes : 5.0 Check tolerance
travel mm	: 10.27	- cm3/1000s. : 9.0
Tolerance mm	: + 0.25	†
Rated speed rpm	: 300	I
guide sleeve		CONTROL LEVER
travel mm Tolerance mm	: 1.14	t control lever
Ocerance iiii	0.23	position degree : 114.0
Rated speed rpm guide sleeve	: 755	tolerance degree : +- 4.0
travel mm	: 6.17	RATED SPEED
Tolerance mm	: + 0.25	rack travel mm : 11.30
Rated speed rpm	: 382	Rated speed rpm : 995 Tolerance 1/min : +- 5
guide sleeve travel mm	: 2.42	rack travel mm · / OO
Tolerance mm		+ rack travel mm : 4.00 + Rated speed rpm : 1115
		Tolerance 1/min : +- 15
Rated speed rpm	: 432	+ rack travel mm : 0.50
guide sleeve travel mm	: 3.22	Tolerance mm : + 0.50
Tolerance mm	: +- 0.25	Tolerance mm : + 0.50 Rated speed rpm : 1300

Tolerance 1/min	: +- 15	+ Pressure hPa - rack travel mm - Tolerance mm	: - : 9.30 : + 0.20
LOW IDLE		MEASUREMENT	
		Rated speed rpm	: 950
control lever position degree tolerance degree		Pressure hPa rack travel mm Tolerance mm	: 950 : 12.00 : +- 0.05
Setting point w/o	out bumper spring	+ Pressure hPa	: 750
Rated speed rpm	: 300	+ rack travel mm + Tolerance mm	: 10.7C : +- 0.20
Testing:		†	
Rated speed rpm rack travel mm Tolerance mm	: 3.90	FUEL DELIVERY CHA	ARACTERISTICS
Rated speed rpm rack travel mm	: 400	Aneroid pressure + hPa - Rated speed rpm - Del. quantity	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 950 : 12.65 : ← 0.05	- cm3/1000 strokes - Tolerance - cm3/1000 strokes - Check tolerance - cm3/1000s.	
Rated speed rpm rack travel mm Tolerance mm	: 10.65	Aneroid pressure hPa Rated speed rpm	: 1400 : 800
Rated speed rpm rack travel mm Tolerance mm	: 11.50	vel. quantity cm3/1000 strokes Tolerance	: 319.0
Rated speed rpm rack travel mm Tolerance mm	: 12.65	- cm3/1000 strokes - Check tolerance - cm3/1000s.	: +- 3.0 : +- 6.0
Rated speed rpm rack travel mm Tolerance mm	: 10.95	Aneroid pressure hPa Rated speed rpm Del. quantity	: - : 550
ANEROID/ALTITUDE		cm3/1000 strokes Tolerance	: 245.0
COMPENSATOR TEST		cm3/1000 strokes Check tolerance	: +- 1.0
SETTING		cm3/1000s. Spreed	: +- 4.0
Rated speed rpm	: 950	Tolerance cm3/1000 strokes	: 8.0
Pressure hPa rack travel mm Tolerance mm	: 12.65	+ Check tolerance - cm3/1000s.	: 12.0
Rated speed rpm	: 950	‡	

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm 100 rack travel mm 9.90 : : +- 0.30 Tolerance mm Del. quantity

cm3/1000 strokes : 200.0

Tolerance

cm3/1000 strokes : \leftarrow 10.0

Check tolerance

cm3/1000s.: + 14.0

LOW IDLE

Rated speed rpm 300

Rack travel in mm . 3.90 : +-Tolerance mm 0.10 Del. quantity cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : :- 3.0

Check tolerance

cm3/1000s. : + 6.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s.10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 07.11.97 : ISO 4113

Combination No. : 0 402 646 7850

Injection pump

Pump designation : PE6P120A320LS7869 EP type number : 0 412 626 887

Governor

Governer design. : RQV300...1050PA1078K

Governer no. : 0 421 815 359

Cust. part No. : 9882898

Customer-spec. information

Customer : LIEBHERR Motor : D 9406 TI-E A3 Power KW : 295.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 165 Tolerance L/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.65 Tolerance mm : +- 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-6-3-5-2-

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance "NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 283.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance		†
cm3/1000s.	: +- 4.0	+ Rated speed rpm : 470 + guide sleeve
Spreed		travel mm : 3.64
Tolerance		+ Tolerance mm : +- 0.25
cm3/1000 strokes	: 5.0	Rated speed rpm : 1330
Check tolerance		+ guide sleeve + travel mm : 13.50
cm3/1000s.	: 9.0	Tolerance mm : + 0.50
		CUTOE OF EDITE DOORTED
Rated speed rpm	: 400	+ GUIDE SLEEVE POSITION
		+
Rack travel in m Tolerance mm		+ control lever
Del. quantity	: 0.10	<pre>position degree : - 1 Rated speed rpm : 1191</pre>
cm3/1000 strokes	: 10.0	- Nacca speed (pill : 177)
Tolerance		Rack travel in mm : 68.25
cm3/1000 strokes Check tolerance	: +- 3.0	+ Tolerance mm : +- 1.30
cm3/1000s.	: +- 6.0	
Spreed		FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes	: 6.0	Dated aread pro 1000
Check tolerance		+ Rated speed rpm : 1000 + Aneroid pressure
cm3/1000s.		+ hPa : 1400
		+ Del. quantity
(B) SETTING OF I	NIECTION DUMP	+ cm3/1000 strckes : 283.0 + Tolerance
WITH GOVERNOR	NJECTION POMP	+ cm3/1000 strokes : +- 1.0
WITH GOVERNOR		- Check tolerance
		+ cm3/1000s. : +- 4.0
GUIDE SLEEVE TRA	VEL.	+ Spreed + Tolerance
Rated speed rpm	• 1117	+ cm3/1000 strokes : 5.0
guide sleeve		+ Check tolerance
travel mm		+ cm3/1000s. : 9.0
Tolerance mm	: + 0.25	<u>†</u>
Rated speed rpm	: 300	
guide sleeve		+ CONTROL LEVER
travel mm	: 1.14	t control loves
Tolerance mm	: +- 0.25	<pre>+ control lever + position degree : 116.0</pre>
Rated speed rpm	: 755	tolerance degree : +- 4.0
guide sleeve travel mm	: 6.17	+ DATEN SDEEN
Travel mm Tolerance mm		+ RATED SPEED + rack travel mm : 11.15
. Stor Give this		rack travel mm : 11.15 Rated speed rpm : 1060
Rated speed rpm	: 382	Tolerance 1/min : + 5
guide sleeve travel mm	: 2.42	rack travel mm : 4.00
Tolerance mm		+ Rated speed rpm : 1160
_	470	Tolerance 1/min : +- 15
Rated speed rpm	: 432	t nack thought an a company
guide sleeve travel mm	: 3.22	rack travel mm : 0.50 Tolerance mm : +- 0.50
Tolerance mm		Rated speed rpm : 1200

Tolerance 1/min	: ← 15	Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: - : 9.30
LOW IDLE		MEASUREMENT	. 1000
control lever position degree tolerance degree	: +- 4.0	Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1000 : 850 : 11.45 : +- 0.05
Setting point w/o	out bumper spring	+ Pressure hPa	: 650
Rated speed rpm	: 300	rack travel mm Tolerance mm	: 10.05
CRT mm min.	: > 8.00	1	0.25
Testing:		FUEL DELIVERY CHA	PACTERISTICS
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm	: 4.20 : + 0.10	Aneroid pressure hPa Rated speed rpm Del. quantity	: 1400 : 500
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 12.15	- cm3/1000 strokes - Tolerance - cm3/1000 strokes - Check tolerance - cm3/1000s.	
Rated speed rpm rack travel mm Tolerance mm	: 500 : 10.00 : + 0.10	Aneroid pressure hPa Rated speed rpm	: 1400
Rated speed rpm rack travel mm Tolerance mm		Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 297.5
Rated speed rpm rack travel mm Tolerance mm	: 950 : 12.00 : + 0.10	Check tolerance cm3/1000s.	: +- 6.0
Rated speed rpm rack travel mm Tolerance mm	: 600 : 10.45 : + 0.10	Aneroid pressure hPa Rated speed rpm Del. quantity	: - : 550
ANEROID/ALTITUDE COMPENSATOR TEST		- cm3/1000 strokes Tolerance - cm3/1000 strokes Check tolerance	
SETTING		- cm3/1000s Spreed - Tolerance	: +- 4.0
Rated speed rpm Pressure hPa	: 1000 : 1400	+ Tolerance + cm3/1000 strokes + Check tolerance	: 8.0
rack travel mm Tolerance mm	: 12.15 : +- 0.05	- cm3/1000s.	: 12.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100 rack travel mm : 9.80 Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : 170.0 Tolerance cm3/1000 strokes : + 10.0 Check tolerance cm3/1000s. : + 14.0

LOW IDLE

Rated speed rpm 400 4.20 Rack travel in mm: Tolerance mm : \leftarrow 0.10 Del. quantity 10.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance cm3/1000s. 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 11.11.97 : ISO 4113

Combination No. : 0 402 648 706

Injection pump

Pump designation : PE8P12OA32OLS7830 EP type number : 0 412 628 844

Governor

Governer design. : RQ350...600/1150PA13

: 62

Governer no. : 0 421 801 826

Cust. part No. :

Customer-spec. information

Customer : MTU Motor : 8V18

: 8V183TE92PE

Power KW : 441.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C : \leftarrow 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0

Overflow quantity

min. L/h : 110 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50

Tolerance mm : + 0.50

Firing order : 8-7-2-6-3-5-4-1

: 0-45-90-135-180-225 Phasing

: -270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.85 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 312.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed Tolerance cm3/1000 strokes : 5.0 Rated speed rpm : 748 guide sleeve travel mm : 7.15 Tolerance mm : + 0.10	Forered Tolerance mm Tolerance cm3/1000 strokes: 4.0 Tolerance cm3/1000 strokes: 8.0 Tolerance cm3/1000 strokes: 8.0 Tolerance cm3/1000 strokes: 8.0 Tolerance cm3/1000 strokes: 8.0 Tolerance cm3/1000 strokes: 8.0 Tolerance cm3/1000 strokes: 8.0 Tolerance cm3/1000 strokes: 8.0 Tolerance cm3/1000 strokes: 8.0 Tolerance mm: 7.54 Tolerance mm: 7.54 Tolerance mm: 7.54 Tolerance mm: 7.55 Tolerance mm: 7.55 Tolerance mm: 7.56 Tolerance mm: 7.57 Tolerance mm: 7.58 Tolerance mm: 7.59 Tolerance mm: 7.20 Tolerance mm:	
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Tolerance cn3/1000 strokes : 5.0 Rated speed rpm : 748 guide sleeve travel mm : 7.15 Tolerance mm : + 0.10	Folerance cm3/1000 strokes : 5.0 Rated speed my guide sleeve travel mm Tolerance mm Rated speed rpm : 350 Rated speed rpm : 350 Rated speed rpm : 4 0.10 Rated speed rpm rolerance mm Rated speed rpm : 5.30 Control lever position degree rpm rolerance	
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Rated speed rpm : 350 GuiDe SLEEVE POSITION	### Guide speed rpm : 350 ### Rated speed rpm : 350 ### Rated speed rpm : 350 ### Rated speed rpm : 5.30 ### Rated speed rpm : 5.30 ### Rated speed rpm : 40.10 ### Rated speed rpm : 300 ### Rated speed rpm : 300 ### Rated speed rpm : 300 ### Rated speed rpm : 300 ### Rated speed rpm : 300 ### Rated speed rpm : 300 ### Rated speed rpm : 300 ### Rated speed rpm : 300 ### Rated speed rpm : 300 ### Rated speed rpm : 300 ### Rated speed rpm : 300 ### Rated speed rpm : 350 ### Rated speed rpm : 350 ### Rated speed rpm : 350 ### Rated speed rpm : 350 ### Rated speed rpm : 350 ### Rated speed rpm : 350 ### Rated speed rpm : 350 ### Rated speed rpm : 350 ### Rated speed rpm : 350 ### Rated speed rpm : 350 ### Rated speed rpm : 1150 ### Rated speed rpm : 1150 ### Rated speed rpm : 7.20 ### Rated speed rpm : 7.20 ### Rated speed rpm : 7.20 ### Rated speed rpm : 685 ### Rated speed rpm : 7.20 ### Rated speed rpm : 7.20 ### Rated speed rpm : 7.20 ### Rated speed rpm : 7.20 ### Rated speed rpm : 7.20 ### Rated speed rpm : 7.20 ### Rated speed rpm : 685 ### Rated speed rpm : 7.20 ### Rated speed rpm : 685 ### Rated speed rpm : 685 ### Rated speed rpm : 7.05 #	: 7.15
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Rack travel in mm : 5.30 Rack travel in mm : 5.30 Tolerance mm : ← 0.10 Bel. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : ← 3.0 Check tolerance cm3/1000s. : ← 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 Mareid speed rpm : 1150 Guide steve travel mm : ← 0.15 Rated speed rpm : 350 Quide sleeve travel mm : ↑ 0.20 Rated speed rpm : 1150 Rated speed rpm : 1150 Rated speed rpm : 350 Quide sleeve travel mm : ↑ 0.20 Rated speed rpm : 150 Rated speed rpm : 150 Rated speed rpm : 150 Rated speed rpm : 150 Rated speed rpm : 150 Rated speed rpm : 150 Quide sleeve travel mm : ↑ 0.20 Rated speed rpm : 150 Rated speed rpm : 685 Tolerance mm : + 0.10 Rated speed rpm : 685 Tolerance mm : + 0.10 Rated speed rpm : 7.05 Tolerance mm : + 0.10 Rated speed rpm : 1310 Rated speed rpm : 7.05 Tolerance mm : + 0.10 Rated speed rpm : 1310 Tolerance mm : + 0.10 Rated speed rpm : 7.05 Tolerance mm : + 0.10 Rated speed rpm : 1310 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50 Tolerance mm : + 0.50	Rated speed rpm : 350 Rack travel in mm : 5.30 Rack travel in mm : 5.30 Rack travel in mm : 5.30 Rack travel in mm : 5.30 Rated speed rpm : 3.0 Rack travel in mm : 5.30 Rack travel in mm : 5.30 Rack travel in mm : 5.30 Rack travel in mm : 7.50 Rack travel in mm : 7.54 Rated speed rpm : 350 Rated speed rpm : 368 Rated speed rpm : 7.20 Rated speed rpm : 7.20 Rated speed rpm : 7.20 Rated speed rpm : 7.20 Rated speed rpm : 7.20 Rated speed rpm : 885 Rated speed rpm : 885 Rated speed rpm : 7.20	
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Tolerance mm : + 0.20 Rated speed rpm : 1150 guide sleeve travel mm : 7.20 Tolerance mm : + 0.10 Rated speed rpm : 685 guide sleeve travel mm : 7.05 Tolerance mm : + 0.10 Rated speed rpm : 6.10 Rated speed rpm : 13.80 Rated speed rpm : 1195 Tolerance 1/min : + 5 Rated speed rpm : 1310 Tolerance 1/min : + 10 Rated speed rpm : 507 guide sleeve travel mm : 5.26 Tolerance mm : 0.50 Tolerance mm : + 0.50	rolerance mm : + 0.20 Rated speed rpm : 1150 guide sleeve ravel mm : 7.20 Rated speed rpm : 685 Rated speed rpm : 685 Guide sleeve ravel mm : 7.05 rack travel mm rolerance mm : + 0.10 Rated speed rpm Rated speed rpm rack travel mm rolerance mm : 5.26 RATED SPEED rack travel mm Rated speed rpm Rated speed rpm rack travel mm rack travel mm rack travel mm rack travel mm rack travel mm rack travel mm rack travel mm rack travel mm rack travel mm rack travel mm	
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Tolerance mm : + 0.10	rack travel mm Rated speed rpm: 685 Rated speed rpm: 685 Rated speed rpm: 7.05 Rated speed rpm: 7.05 Rated speed rpm: 507 Rated speed rpm: 507 Rated speed rpm: 5.26 Rated speed rpm: 5.26 Rated speed rpm: 5.26	
Rated speed rpm : 685 guide sleeve travel mm : 7.05 Tolerance mm : 4.00 Tolerance mm : 4.00 Rated speed rpm : 1310 Rated speed rpm : 507 guide sleeve travel mm : 5.26 Rated speed rpm : 0.50 Tolerance mm : 4.00 Rated speed rpm : 1310 Tolerance 1/min : +- 10 Tolerance mm : 0.50 Tolerance mm : 5.26	Rated speed rpm : 685 Rated speed rpm : 685 Tolerance 1/m Folerance mm : 7.05 Folerance mm : 0.10 Rated speed rpm Rated speed rpm Rated speed rpm Folerance 1/m Rated speed rpm Tolerance 1/m Rated speed rpm Tolerance mm Foravel mm Tolerance mm	
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guide sleeve + travel mm : 7.05 + rack travel mm : 4.00 Tolerance mm : + 0.10 + Rated speed rpm : 1310 Rated speed rpm : 507 + 10 guide sleeve + rack travel mm : 0.50 travel mm : 5.26 + Tolerance mm : + 0.50	guide sleeve ravel mm : 7.05	
travel mm : 7.05	ravel mm : 7.05 rack travel mm Folerance mm : + 0.10 Rated speed rp Rated speed rpm : 507 guide sleeve rack travel mm ravel mm : 5.26 Tolerance mm	ın : +- >
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guide sleeve + rack travel mm : 0.50 travel mm : 5.26 + Tolerance mm : + 0.50	guide sleeve + rack travel mr travel mm : 5.26 + Tolerance mm	in : +- 10
travel mm : 5.26 + Tolerance mm : + 0.50	ravel mm : 5.26 + Tolerance mm	
7.1	Tolerance mm : + 0.10 + Rated speed ru	
loterance mm : + 0.10 + Rated speed rpm : 1350		pm : 1350
+	+	
Pated speed spm · 1/50 ±	Rated speed rpm : 1450 +	

LOW IDLE

control lever

73.0 position degree : tolerance degree : + 4.0

Setting point w/out bumper spring

250 Rated speed rpm :

CRT mm min. :> 7.00

Testing:

Rated speed rpm 350 5.30 rack travel mm Tolerance mm : +- 0.10

TORQUE CONTROL

1150 Rated speed rpm 14.85 rack travel mm Tolerance mm : +- 0.05

750 Rated speed rpm 14.85 rack travel mm : +- 0.05 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

500 Rated speed rpm Pressure hPa

500 Rated speed rpm Pressure hPa 400 1.20 rack travel mm Tolerance mm : +- 0.05

MEASUREMENT

500 Rated speed rpm

1200 Pressure hPa 5.55 rack travel mm : + 0.15Tolerance mm

Start interlock

100 Rated speed rpm : > Rated speed rpm : < 200 Check

speed 1/min : > 80

Check

speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

2000 Rated speed rpm 750

Del. quantity

cm3/1000 strokes : 308.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s.: + 5.0

Aneroid pressure

hPa Rated speed rpm 500 Del. quantity

cm3/1000 strokes : 121.0

Tolerance

cm3/1000 strokes : +-1.0 Check tolerance

cm3/1000s. : +-4.0

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance cm3/1000s.

9.0

STARTING FUEL DELIVERY

Rated speed rpm rack travel mm 16.00 Tolerance mm : +- 0.50 Del. quantity

cm3/1000 strokes : 330.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.30 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes: 19.0

Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 14, 10, 97

Test oil

: ISO 4113

Combination No. : 0 402 678 826

Injection pump

Pump designation : PE8P120A320LS7878-1

EP type number : 0 412 628 906

Governor

Governer design. : RSV400...1000P1A589

Governer no. : 0 421 833 449

Cust. part No. : 9279387

Customer-spec. information Customer : LIEBHERR

Motor : D 9408 TI-E Power KW : 317.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : + 0.1

Overflow quantity

min. L/h : 105 Tolerance L/h : + 10.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

M25

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.55 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-8-7-2-6 :-3-5-4

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.00

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 251.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 4.0	Check tolerance cm3/1000s. : +- 4.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes : 5.0	Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	CONTROL LEVER
 ‡	
Rated speed rpm : 400	<pre>control lever position degree : 98.0 tolerance degree : +- 4.0</pre>
Rack travel in mm : 4.75	RATED SPEED
Del. quantity	rack travel mm : 12.00
cm3/1000 strokes : 26.0 +	Rated speed rpm : 940
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : + 3.0	much travel and 1 00
Check tolerance + 6.0 +	rack travel mm : 4.00 Rated speed rpm : 990
Spreed	Tolerance 1/min : +- 15
Tolerance	
cm3/1000 strokes : 6.0	rack travel mm : 0.85
Check tolerance + cm3/1000s. : 10.0 +	Tolerance mm : +- 0.55
cm3/1000s. : 10.0	Rated speed rpm : 1160
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1005 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
I	FOM IDEL
control lever	
position degree : - 3	control lever
Rated speed rpm : 800	<pre>position degree : 74.0 tolerance degree : +- 4.0</pre>
Rack travel in mm: 0.50	toterance degree 4.0
Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring	Rated speed rpm : 400_
pre-tension + click setting x : 4.00 +	rack travel mm : 3.75 Tolerance mm : +- 0.10
Click setting x . 4.00	Toterance IIIII . +- U. IU
	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm : 900	Rated speed rpm : 400
Rated speed rpm : 900 + Aneroid pressure +	rack travel mm : 4.75 Tolerance mm : +- 0.20
hPa : 1200 +	
Del. quantity	rack travel mm : 2.00 Rated speed rpm : 500
cm3/1000 strokes : 251.0	Rated speed rpm : 500 Tolerance 1/min : +- 30
Tolerance + 1.0 + 1.0	Tolerance 1/min : +- 30
- CIII 7 1000 3010KC3	
'	

		+ Aneroid pressure
TORQUE CONTROL		
Rated speed rpm	: 900	+ Rated speed rpm : 700 + Del. quantity
rack travel mm	: 13.00	cm3/1000 strokes : 253.0
Tolerance mm	: +- 0.05	Tolerance
roter affec him	0.05	+ cm3/1000 strokes : +- 3.0
Rated speed rpm	: 500	+ Check tolerance
rack travel mm		+ cm3/1000s. : +- 6.0
Tolerance mm		1 0.0
TOTOL GIVE WAY	0.10	
Rated speed rpm	: 700	Aneroid pressure
rack travel nm		hPa : -
Tolerance mm	: + 0.10	Rated speed rpm : 500
TOTOL GITTO HEN		+ Del. quantity
		- + cm3/1000 strokes : 213.0
ANEROID/ALTITUDE		+ Tolerance
COMPENSATOR TEST		+ cm3/1000 strokes : +- 1.0
TOTAL CHOICE OF TEOT		+ Check tolerance
		+ cm3/1000s. : +- 4.0
SETTING		+ Spreed
		+ Tolerance
Rated speed rpm	: 500	+ cm3/1000 strokes : 8.0
Pressure hPa		Check tolerance
rack travel mm		+ cm3/1000s. : 12.0
Tolerance mm		12.0
. Occi di loc ilisi	0.10	<u> </u>
Rated speed rpm	: 500	
Pressure hPa	• -	STARTING FUEL DELIVERY
rack travel mm	•	OLEWITING LOFT REFTACKL
Tolerance mm	: +- 0.15	Rated speed rpm : 100
roter drice him	. 1 0.15	rack travel mm : 20.50
MEASUREMENT		+ Tolerance mm : + 0.50
I IEMOOND IEM		+ Del. quantity
Rated speed rpm	: 500	+ cm3/1000 strokes : 215.0
wared speed thu	. , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Tolerance
Pressure hPa	: 800	+ cm3/1000 strokes : +- 20.0
rack travel mm	: 12.50	+ Check tolerance
Tolerance mm	: +- 0.05	+ cm3/1000s. : + 24.0
roter diffe dilli	. 4 = 0.03	1 (11137 10003
Pressure hPa	: 700	1
rack travel mm	: 11.70	<u> </u>
Tolerance mm	: +- 0.15	
. Secretive and	• • 0.12	LOW IDLE
		1000 1000
		+ Rated speed rpm : 400
FUEL DELIVERY CH.	ARACTERISTICS	+
		Rack travel in mm: 4.75
		+ Tolerance mm : +- 0.20
Aneroid pressure		+ Del. quantity
hPa	: 1200	+ cm3/1000 strokes : 26.0
Rated speed rpm		+ Tolerance
Del. quantity	- 	+ cm3/1000 strokes : +- 3.0
cm3/1000 strokes	: 263.0	Check tolerance
Tolerance		+ cm3/1000s. : +- 6.0
cm3/1000 strokes	: 3.0	+ Spreed
Check tolerance	J. 0	+ Tolerance
cm3/1000s.	: +- 6.0	cm3/1000 strokes : 6.0
5.1157 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.0	+ Check tolerance
		+ cm3/1000s. : 10.0
		r (11137 10000)

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 10.11.97 Edition Test oil : ISO 4113

Combination No. : 0 402 678 826E

Injection pump

Pump designation : PE8P120A320LS7878-1 EP type number : 0 412 628 906

Governor

Governer design. : RSV400...1000P1A589

Governer no. : 0 421 833 449

Cust. part No. : 9279387

Customer-spec. information Customer : LIEBHERR : D 9408 TI-E : 317.0 Motor

Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 105 Tolerance L/h : +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure sar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-8-7-2-6

: - 3- 5- 4

: 0-45-90-135-180 Phasing

: -225-270-315 : ← 0.50

Tolerance Check

tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.00

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 251.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance + 4.0 + + + + + + + + + + + + + + + + + + +	Check tolerance cm3/1000s. : 9.0
Spreed	
Tolerance cm3/1000 strokes : 5.0	RATED SPEED rack travel mm : 12.00 Rated speed rpm : 940 Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : 9.0	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1160
Rated speed rpm : 400	rack travel mm : 4.00 Rated speed rpm : 1005
Rack travel in mm : 4.75 Tolerance mm : +- 0.20 Del. quantity	Tolerance 1/min : + 15
cm3/1000 strokes : 26.0 +	
Tolerance + 3.0 + Check tolerance +	LOW IDLE
cm3/1000s. : +- 6.0 +-	Setting point w/out bumper spring
Tolerance +	Rated speed rpm : 400
cm3/1000 strokes : 6.0 + Check tolerance +	rack travel mm : 3.75 Tolerance mm : +- 0.10
cm3/1000s. : 10.0	Testing:
(B) SETTING OF INJECTION PUMP WITH GOVERNOR +	Rated speed rpm : 400 rack travel mm : 4.75 Tolerance mm : + 0.20
GUIDE SLEEVE POSITION +	TORQUE CONTROL
control lever position degree : -3	Rated speed rpm : 900 rack travel mm : 13.00 Tolerance mm : +- 0.05
+	Rated speed rpm : 500
governor spring + pre-tension +	rack travel mm : 13.00 Tolerance mm : +- 0.10
click setting x : 4.00	Rated speed rpm : 700
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 13.00 Tolerance mm : +- 0.10
Rated speed rpm : 900	ANEDOTO /AL TITUDE
Aneroid pressure + hPa : 1200 +	ANEROID/ALTITUDE COMPENSATOR TEST
Del. quantity + cm3/1000 strokes : 251.0 +	
Tolerance +	
	SETTING
cm3/1000 strokes : +- 1.0 + Check tolerance	Rated speed rpm : 500
cm3/1000 strokes : +- 1.0 +	

Rated speed rpm Pressure hPa	: 500 : -
rack travel mm Tolerance mm	: 11.30 : + 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 800 : 12.50 : + 0.05
Pressure hPa rack travel mm Tolerance mm	: 700 : 11.70 : + 0.15
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	4200
hPa Rated speed rpm	: 1200 : 500
Del. quantity cm3/1000 strokes	: 263.0
Tolerance cm3/1000 strokes	: ← 3.0
Check tolerance cm3/1000s.	: + 6.0
Aneroid pressure	
hPa Rated speed rpm	: 1200 : 700
Del. quantity cm3/1000 strokes	: 253.0
Tolerance cm3/1000 strokes	: + 3.0
Check tolerance cm3/1000s.	; 6.0
Aneroid pressure	
hPa Rated speed rpm	: – : 550
Del. quantity cm3/1000 strokes	: 213.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: +- 4.0
Spreed	4.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 215.0
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm : 400 Rack travel in mm: 4.75 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : \leftarrow 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance 10.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 10,11,97 Test oil : ISO 4113

Combination No. : 0 402 678 826F

Injection pump

Pump designation : PE8P120A320LS7878-1

EP type number : 0 412 628 906

Governor

Governer design. : RSV400...1000P1A589

Governer no. : 0 421 833 449

Cust. part No. : 9883113

Customer-spec. information

Customer : LIEBHERR : D 9408 TI-E Motor

: 342.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 105 Tolerance l/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

4.55 Prestroke mm : +- 0.05 Tolerance mm

Check

: + 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

: 1-8-7-2-6 Firing order

: - 3- 5- 4

: 0-45-90-135-180 Phasing

: -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.75

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 271.0

Tolerance	Tolerance
cm3/1000 strokes : + 1.0 +	cm3/1000 strokes : +- 1.0
	Check tolerance
Check tolerance	cm3/1000s. : +- 4.0
cm3/1000s. : + 4.0 +	Spreed
	Tolerance
Spreed +	cm3/1000 strokes : 5.0
<u>†</u>	Check tolerance
Tolerance	cm3/1000s. : 9.0
cm3/1000 strokes : 5.0 +	
Check tolerance +	
cm3/1000s. : 9.0 +	CONTROL LEVER
†	control lever
†	position degree : 103.0
Rated speed rpm : 400	
T	RATED SPEED
Rack travel in mm: 4.65	rack travel mm : 12.75
Tolerance mm : + 0.20	Rated speed rpm : 940
Del. quantity +	Tolerance 1/min : +- 5
cm3/1000 strokes : 26.0	made Americal are 1 / 00
Tolerance	rack travel mm : 4.00
cm $3/1000$ strokes : \leftarrow 3.0	Rated speed rpm : 990
Check tolerance	Tolerance 1/min : +- 15
cm3/1000s. : +- 6.0 +	0.85
Spreed	rack travel mm : 0.85
Tolerance	Tolerance mm : +- 0.55
cm3/1000 strokes : 6.0	Rated speed rpm : 1160
Check tolerance	
cm3/1000s. : 10.0 +	rack travel mm : 4.00
†	Rated speed rpm : 1015 Tolerance 1/min : +- 15
(D) OFTING OF THURSTION DUMP	Tolerance 1/min : +- 15
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	
Ť	
I	LOW IDLE
GUIDE SLEEVE POSITION	LOW IVEL
ADIDE DELEVE LODITION	
1	control lever
control lever	position degree : 70.0
position degree : -3	position degites to the
Rated speed rpm : 800	Setting point w/out bumper spring
The control of the co	occoming position in case campos specific
Rack travel in mm: 0.50	Rated speed rpm : 400
Tolerance mm : + 0.20	rack travel mm : 3.65
+	Tolerance mm : +- 0.10
governor spring	
	Testing:
pre-tension +	
pre-tension + click setting x : 4.00 +	· ·
click setting x : 4.00	-
	-
click setting x : 4.00	Rated speed rpm : 400
	Rated speed rpm : 400 rack travel mm : 4.65
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 400 rack travel mm : 4.65
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900	Rated speed rpm : 400 rack travel mm : 4.65
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 400 rack travel mm : 4.65 Tolerance mm : +- 0.20 TORQUE CONTROL Rated speed rpm : 900
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1400	Rated speed rpm : 400 rack travel mm : 4.65 Tolerance mm : +- 0.20 TORQUE CONTROL
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure	Rated speed rpm : 400 rack travel mm : 4.65 Tolerance mm : +- 0.20 TORQUE CONTROL Rated speed rpm : 900

Rated speed rpm rack travel mm Tolerance mm Rated speed rpm	: 500 : 13.75 : + 0.10	Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +-
rack travel mm Tolerance mm	: 13.75 : +- 0.10	Aneroid pressure hPa Rated speed rpm Del. quantity	•
ANEROID/ALTITUDE COMPENSATOR TEST		cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: +-
SETTING Rated speed rpm Pressure hPa rack travel mm	: 500 : 1400 : 13.75	cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: +-
Tolerance mm Rated speed rpm	: + 0.10 : 500	cm3/1000s.	•
Pressure hPa rack travel mm Tolerance mm	11.40 : +- 0.15	STARTING FUEL DELI Rated speed rpm	VERY
MEASUREMENT Rated speed rpm	: 500	+ rack travel mm + Tolerance mm + Del. quantity + cm3/1000 strokes	: +-
Pressure hPa rack travel mm Tolerance mm	: 850 : 13.10 : + 0.05	Tolerance cm3/1000 strokes cm3/1000 strokes check tolerance cm3/1000s.	· : +-
Pressure hPa rack travel mm Tolerance mm	: 750 : 12.15 : + 0.15		
		LOW IDLE	
FUEL DELIVERY CHAR	RACTERISTICS	Rated speed rpm	:
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1400 : 500	- Rack travel in mm - Tolerance mm - Del. quantity - cm3/1000 strokes - Tolerance	: +-
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.		cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: +-
Aneroid pressure hPa Rated speed rpm	: 1400 : 700	cm3/1000 strokes Check tolerance cm3/1000s.	: :
Del. quantity cm3/1000 strokes	: 278.0	‡	

3.0

6.0

500

216.0

1.0

4.0

8.0

12.0

100 20.50 0.50

215.0

20.0

24.0

400

4.65 0.20

26.0

3.0

6.0

6.0

10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 12.11.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 796 815

Injection pump

Pump designation : PES6P12OA72O/3LS7388

EP type number : 0 412 726 946

Governor

Governer design. : RE30

: 0 421 890 035 Governer no.

Cust. part No. : 51.11103-7458

Customer-spec. information

Customer : MAN

: D 2866 LOH 25 Motor

Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar $: \leftarrow 0.1$

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 600 x length mm :

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : \leftarrow 1.0

5.45 Prestroke mm Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 15.50 : +- 0.50 Tolerance mm

Firing order : 6-2-4-1-5-

: 3

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

: +- 0.75 tolerance °NW

Start of delivery blocking

: +- 0.10Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 6

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min=1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION Engine speed min-1: Setting point (P, R and H pump) 3.100 Uact V : 13.00 CRT mm : +/- 0.05 Tolerance mm Check : +/- 0.10tolerance mm Check value (P, R and H pump) 1.700 Uact V 6.15 CRT mm : +/- 0.25Tolerance mm Check : +/- 0.30tolerance mm Setting point (M pump) 3.100 Uact V 12.50 CRT mm Tolerance mm : +/- 0.05 Check : +/- 0.10 tolerance mm Check value (amua M) Uact V 1.700 CRT mm 5.50 : +/- 0.25 Tolerance mm Check : +/- 0.30tolerance mm Stop position (P, R and H pump) Uact V : Value with deenergised adjusting magnet and control rod in stop position. 0.75 CRT mm : +/- 0.25 Tolerance mm Check : +/- 0.35 tolerance mm Stop position (qmuq M) 0,720 Uact V Tolerance Volt : + 0,065

CRT mm : 1,00 Starting position (amuq M) Uact V 4,500 Tolerance Volt : + 0,115 19,00 CRT mm Tolerance mm : +- 0,80 ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps) Test with control rod in stop position Engine speed min-1: 60 Amplitude V 1.4 Tolerance V : +/- 0.6 Check tolerance V : +/- 1.20 Engine speed min-1: 600 Difference Amplitude to Amplitude V : max.1.4 (C) INJECTION PUMP WITH POSITIONER TEST POINT V1 Rated speed rpm 750 Uact V 3.100 Del. quantity cm3/1000 strokes : 271.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s.4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 9.0 FUEL DELIVERY CHARACTERISTICS Rated speed rpm 1000 3.120 Uact V Del. quantity cm3/1000 strokes : 252.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance 6.0 cm3/1000S. : +-

Rated speed rpm	: 750
Uact V	: 1.470
Del. quantity	
cm3/1000 strokes	: 83.0
Tolerance cm3/1000 strokes	: +- 5.0
Check tolerance	. +- 5.0
cm3/1000s.	: + 9.0
Spreed	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
CIIID7 100003.	. 12.0
Rated speed rpm	: 500
Uact V	: 1.950
Del. quantity cm3/1000 strokes	: 176.0
Tolerance	. 170.0
cm3/1000 strokes	: + 4.0
Check tolerance	
cm3/1000s.	: +- 8.0
TEST POINT L1	
	705
Rated speed rpm	: 325 : 1.470
Uact V Tolerance Volt	: +- 0.060
Check tolerance	0.000
Volt	: +- 0.060
Del. quantity	
cm3/1000 strokes	: 40.0
Tolerance	7.0
cm3/1000 strokes Spreed	: +- 3.0
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000s.	: 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.11.97 Edition Test oil : ISO 4113

Combination No. : 0 402 946 027

Injection pump

Pump designation : PES6P120A320RS8047

EP type number : 0 412 926 029

Governor

Governer design. : RQV275...1250PA1312K

Governer no. : 0 421 815 966

Cust. part No. : CCEP 5160A 66-244

Customer-spec. information

Customer : RENAULT V.I. : MIDR 06.02.26L71 : 141.7 Motor

Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 145 Tolerance l/h : \leftarrow 20.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5 Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.00 Tolerance mm : + 0.05 5.00

Check

: +- 0.10 tolerance mm

Rack travel in mm : 11.00 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

*NW after s.o.d. : -0.25

Tolerance : \leftarrow 0.50 Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

11.00 travel Difference ° CS : 3.25

		t
		Rated speed rpm : 325
		+ guide sleeve
CRT ZERO POSITION	∤	† travel mm : 1.52
		+ Tolerance mm : + 0.20
Darly Americal during	. 12 10	Dated aread area a 027
Rack travel in mo	n: 12.10 :+- 0.05	+ Rated speed rpm : 923 + guide sleeve
Tolerance mm	: 0.05	travel mm : 6.76
		+ Tolerance mm : + 0.25
BASIC SETTING		1 Oct and min
		Rated speed rpm : 550
Rated speed rpm	: 1250	+ guide sleeve
		† travel mm : 3.92
Del. quantity		+ Tolerance mm : + 0.25
cm3/1000 strokes	: 183.0	+
		+ Rated speed rpm : 1650
Tolerance		+ guide sleeve
cm3/1000 strokes	: + 1.0	+ travel mm : 13.50
011. 1. 1		† Tolerance mm : + 0.50
Check tolerance	/ 0	<u> </u>
cm3/1000s.	: +- 4.0	GUIDE SLEEVE POSITION
Spreed		T GOIDE SEEENE POSITION
opr eed		
Tolerance		+ control lever
cm3/1000 strokes	: 5.0	position degree : - 1
	•	+ Rated speed rpm : 1430
Check tolerance		+
cm3/1000s.	: 9.0	+ Rack travel in mm : 11.10
		+ Tolerance mm : + 2.70
		+
	725	SHILL LOAD DELTHERY AT SHILL LOAD STOR
Rated speed rpm	: 325	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	: -7.20	Rated speed rpm : 1250
Tolerance mm	: +- 0.10	Aneroid pressure
Del. quantity		+ hPa : 1600
cm3/1000 strokes	: 39.0	+ Del. quantity
Tolerance		+ cm3/1000 strokes : 183.0
cm3/1000 strokes	: +- 2.0	+ Tolerance
Check tolerance		+ cm3/1000 strokes : + 1.0
cm3/1000s.	: +- 6.0	+ Check tolerance
Spreed		+ cm3/1000s. + 4.0
Tolerance		+ Spreed
cm3/1000 strokes	: 8.0	+ Tolerance
Check tolerance	42.0	+ cm3/1000 strokes : 5.0
cm3/1000S.	: 12.0	+ Check tolerance + cm3/1000s. : 9.0
		+ cm3/1000s. : 9.0
(B) SETTING OF IN	JECTION PUMP	1
WITH GOVERNOR	OCCUTOIA LOUI	
WILL GOACIMAN		+ CONTROL LEVER
		+
GUIDE SLEEVE TRAV	EL	+ control lever
		position degree : 296.0
Rated speed rpm	: 1340	+ tolerance degree : +- 4.0
guide sleeve		+
Access to the second		
travel mm Tolerance mm	: 9.96 : +- 0.15	+ RATED SPEED + rack travel mm : -1.00

Rated speed rpm Tolerance 1/min	: 1330 : +- 15
rack travel mm Rated speed rpm Tolerance 1/min	: 1470
rack travel mm Tolerance mm Rated speed rpm	: ← 0.55
LOW IDLE	
control lever position degree tolerance degree	: 241.0 : + 4.0
Setting point w/c	out bumper spring
Rated speed rpm	: 200
CRT mm min.	: < -5.80
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 325 : -7.20 : + 0.10
Rated speed rpm rack travel mm	: 325 : > 5.80
TORQUE CONTROL Rated speed rpm	: 1250
Rated speed rpm rack travel mm Tolerance mm	: 650 : -2.10 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 350 : -3.25 : + 0.25
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa Tolerance mm	: 1250 : 1600 : +- 0.10

500

Pressure hPa rack travel mm Tolerance mm	: - : -4.70 : + 0.20
	. 1250
Rated speed rpm	: 1250
Pressure hPa rack travel mm Tolerance mm	: 240 : −3.40 : ← 0.20
Pressure hPa rack travel mm Tolerance mm	: 520 : -1.20 : + 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 175 : < 240
Check speed 1/min Check	: > 155
speed 1/min	: < 260
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1600 : 650
Del. quantity cm3/1000 strokes	: 172.0
Tolerance cm3/1000 strokes Check tolerance	: + 3.0
cm3/1000s.	: +- 6.0
Aneroid pressure hPa	: -
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 120.0
cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 113.0

Rated speed rpm

Tolerance cm3/1000 strokes : +- 10.0 Check to erance cm3/10005. : +- 14.0

LOW IDLE

Rated speed rpm : 325 Rack travel in mm : -7.20 : + 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 39.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s.: ← 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.11.97 Edition : 06.11.97 Test oil : ISO 4113 Edition

Combination No. : 0 402 946 031

Injection pump

Pump designation : PES6P120A320RS8050 EP type number : 0 412 926 032

Governor

Governer design. : RQ250/1000PA1342

Governer no. : 0 421 801 822

Cust. part No. : 1388694

Customer-spec. information Customer : SCANIA Motor : DSI 9E01 Power KW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 095

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

overtiow quantity min. l/h: 70 Tolerance l/h: \leftarrow 10.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

bar : 251.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.00 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

: +- 0.75 tolerance °NW

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.30

Tolerance mm : ← 0.05

Del. quantity	f guide sleeve travel mm : 3.50
cm3/1000 strokes : 240.0	Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 530 guide sleeve
	+ travel mm : 4.50
Check tolerance cm3/1000s. : +- 7.0	+ Tolerance mm : + 0.10
Spreed	Rated speed rpm : 1670 guide sleeve
man I	+ travel mm : 11.50
Tolerance cm3/1000 strokes : 8.0	Tolerance mm : + 0.50
Check tolerance cm3/1000S. 12.0	GUIDE SLEEVE POSITION
	Rated speed rpm : 600
	+ Rack travel in mm : 16.00
Rated speed rpm : 285	Tolerance mm : +- 0.60
Rack travel in mm: 5.30	
Tolerance mm : + 0.10	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 30.0 Tolerance	Rated speed rpm : 700 Aneroid pressure
cm3/1000 strokes : +- 3.0	+ hPa : 1500
Check tolerance	+ Del. quantity
cm3/1000s. : + 6.0	+ cm3/1000 strokes : 240.0
Spreed	+ Tolerance
Tolerance	+ cm3/1000 strokes : + 1.0
cm3/1000 strokes : 4.0	+ Check tolerance
Check tolerance	+ cm3/1000s. : +- 7.0
cm3/1000s. : 8.0	+ Spreed + Tolerance
	+ cm3/1000 strokes : 8.0
(B) SETTING OF INJECTION PUMP	+ Check tolerance
WITH GOVERNOR	+ cm3/1000s. : 12.0
	+
GUIDE SLEEVE TRAVEL	
Datasian and many 10/4	CONTROL LEVER
Rated speed rpm : 1061 guide sleeve	t + control lever
travel mm : 4.72	position degree : 43.0
Tolerance mm : + 0.15	tolerance degree : +- 4.0
Rated speed rpm : 285 guide sleeve	control lever position degree : 105.0
travel mm : 2.17	+ tolerance degree : +- 4.0
Tolerance mm : +- 0.20	+ RATED SPEED
Rated speed rpm : 1000 guide sleeve	rack travel mm : 11.30 Rated speed rpm : 1060
travel mm : 4.50	Tolerance 1/min : +- 5
Toterance mm : + 0.10	Check
	+ speed 1/min : +- 10
Rated speed rpm : 410	+ + rack travel mm : 4.00
•	י ומנג נומיכנ וווווו · 4.00

Rated speed rpm : 1235 Tolerance 1/min : + 15 Check speed 1/min : + 20 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1350	Rated speed rpm : 500 Pressure hPa : - rack travel mm : 10.40 Tolerance mm : +- 0.20 MEASUREMENT Rated speed rpm : 500
LOW IDLE	Pressure hPa : 275 rack travel mm : 10.90 Tolerance mm : + 0.15
control lever position degree : 81.0 tolerance degree : + 4.0	Pressure hPa : 425 rack travel mm : 12.10 Tolerance mm : ÷- 0.05
control lever position degree : 21.0 tolerance degree : + 4.0	Start interlock Rated speed rpm : > 100 Rated speed rpm : < 170
Setting point w/out bumper spring Rated speed rpm : 150	Check speed 1/min :> 80
CRT mm min. :> 8.00	Check speed 1/min : < 190
Testing:	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 285 rack travel mm : 5.30 Tolerance mm : + 0.10 rack travel mm : < 2.00 Rated speed rpm : 450 Tolerance 1/min : + 30 TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm : + 0.05 Rated speed rpm : 1000 rack travel mm : 12.30 Tolerance mm : 10.05 ANEROID/ALTITUDE COMPENSATOR TEST	Aneroid pressure hPa : 1500 Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 212.0 Tolerance cm3/1000 strokes : + 4.0 Check tolerance cm3/1000s. : + 6.0 Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 210.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0
Tolerance mm : 5.30 Tolerance mm : 40.10 rack travel mm : 450 Rated speed rpm : 450 Tolerance 1/min : + 30 TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm : + 0.05 Rated speed rpm : 1000 rack travel mm : 12.30 Tolerance mm : + 0.05 ANEROID/ALTITUDE	Aneroid pressure hPa : 1500 Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 212.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 6.0 Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 210.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance

Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 250.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s. : + 25.0

LOW IDLE

Rated speed rpm : 285 Rack travel in mm : 5.30 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance 4.0 cm3/1000 strokes : Check tolerance 8.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.09.91 Test oil : ISO 4113

Combination No. : 0 403 436 109

Injection pump

Pump designation : PES6MW100/120RS1143

EP type number : 0 413 406 137

Governor

Governer design. : RQV300...1050MW82-4

Governer no. : 0 420 083 168

Cust. part No. : 3915581

Customer-spec. information

Customer : CUMMINS/US
Motor : 6 CTA-830

Power KW : 175.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 017

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.10 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

BASIC SETTING

Del. quantity

cm3/1000 strokes : 149.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : + 3.0

Spreed

Tolerance

cm3/1000 strokes :

3.5

Check tolerance

cm3/1000s. :

6.0

Rated speed rpm : 300	theck tolerance cm3/1000s. : 6.0
Rack travel in mm: 7.80	+
Tolerance mm : + 0.10 Del. quantity	CONTROL LEVER
cm3/1000 strokes : 18.0	control lever
Tolerance cm3/1000 strokes : + 2.0	+ position degree : 98.0 + tolerance degree : + 4.0
Check tolerance	+
cm3/1000s. : + 4.5 Spreed	+ RATED SPEED + rack travel mm : 11.60
Tolerance	+ Rated speed rpm : 1095
cm3/1000 strokes : 3.5 Check tolerance	Tolerance 1/min : + 5
cm3/1000s. : 5.5	rack travel mm : 4.00
	Rated speed rpm : 1200 Tolerance 1/min : +- 15
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	+ rack travel mm : 0.50 + Tolerance mm : + 0.50
	Rated speed rpm : 1300
GUIDE SLEEVE TRAVEL	<u>†</u>
Rated speed rpm : 1100	Ŧ
guide sleeve travel mm : 8.00	LOW IDLE
Tolerance mm : + 0.10	+
Rated speed rpm : 300	t control lever
Rated speed rpm : 300 guide sleeve	+ position degree : 66.0
travel mm : 1.30 Tolerance mm : ← 0.20	tolerance degree : +- 4.0
Tolerance mm : + 0.20	+ Setting point w/out bumper spring
Rated speed rpm : 550	+
guide sleeve travel mm : 3.30	Rated speed rpm : 100
Tolerance mm : + 0.30	+ CRT mm min. :> 9.30
Rated speed rpm : 1210	† + Testing:
guide sleeve	+
travel mm : 9.20 Tolerance mm : + 0.20	Rated speed rpm : 300 rack travel mm : 7.80
	Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm : 1050	ANEROID/ALTITUDE
Aneroid pressure hPa : 900	+ COMPENSATOR TEST
Del. quantity	+
cm3/1000 strokes : 149.0 Tolerance	SETTING
cm3/1000 strokes : + 1.0	Rated speed rpm : 500
Check tolerance cm3/1000s. : ← 3.0	+ Pressure hPa : 900 - rack travel mm : 12.65
Spreed	Tolerance mm : +- 0.05
Tolerance cm3/1000 strokes : 3.5	+ Rated speed rpm : 500
cm3/1000 strokes : 3.5	T water sheer thin : 200

Pressure hPa rack travel mm Tolerance mm	: - : 10.50 : + 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 450 : 12.10 : ← 0.20
Pressure hPa rack travel mm Tolerance mm	: 225 : 10.95 : ← 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 220
Check	; > 80
speed 1/min Check	
Check	: < 240
Check speed 1/min FUEL DELIVERY CHA	
Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa	RACTERISTICS : 900
Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity	RACTERISTICS : 900 : 700
Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 900 : 700 : 147.0
Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 900 : 700 : 147.0 : ← 1.5
Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 900 : 700 : 147.0
Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 900 : 700 : 147.0 : ← 1.5
Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000strokes	: 900 : 700 : 147.0 : + 1.5 : + 4.0
Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure	: 900 : 700 : 147.0 : + 1.5 : + 4.0
Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm	: 900 : 700 : 147.0 : + 1.5 : + 4.0
Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 900 : 700 : 147.0 : ← 1.5 : ← 4.0 : 5.0 : 7.0
Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity	: 900 : 700 : 147.0 : + 1.5 : + 4.0 : 5.0 : 7.0

Rated speed rpm rack travel mm Tolerance mm	:	+	100 20.00 1.00
Del. quantity cm3/1000 strokes Tolerance	:		220.0
cm3/1000 strokes	:	+-	5.0
Check tolerance cm3/1000s.	;	+	8.0

LOW IDLE	
Rated speed rpm	: 300
Rack travel in mm Tolerance mm Del. quantity	: 7.80 : ← 0.10
cm3/1000 strokes	: 18.0
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.02.89 : ISO 4113

Combination No.

: 0 403 446 152

Injection pump

Pump designation : PES6MW100/320RS1119

EP type number

: 0 413 406 113

Governor

Governer design. : RQV300...1400MW57

Governer no.

: 0 420 083 078

Cust. part No. :

Customer-spec. information : VOLVO

Customer

: TD 61-3012

Motor

Power KW

: 132.0

TEST BENCH REQUIREMENTS

Inlet line

: 3.1

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

173.5

Tolerance bar

: **←** 1.5

Test lines : 1 680 750 014

Outside diameter :

6.0

x inside diameter : 2.0 x length mm 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

31.0 Test pressure bar : Tolerance bar : + 1.0

Prestroke mm

3.15

: +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order

: 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance

: + - 0.50

Check

tolerance °NW

: + 0.75

BASIC SETTING

Del. quantity

cm3/1000 strokes :

91.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +-3.0

Spreed

Tolerance

cm3/1000 strokes :

3.5

Check tolerance

cm3/1000s.

6.0

Rated speed rpm : 300 Rack travel in mm : 6.95 Tolerance mm : + 0.05 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 5.0	Aneroid pressure hPa : 505 Del. quantity cm3/1000 strokes : 91.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 6.0
cm3/1000s. : 5.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR	control Lever control lever position degree : 114.0 tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL Rated speed rpm : 300	RATED SPEED rack travel mm : 10.60 Rated speed rpm : 1445 Tolerance 1/min : + 5
guide sleeve travel mm : 1.40 Tolerance mm : +- 0.20	rack travel mm : 4.00 Rated speed rpm : 1610 Tolerance 1/min : + 15
Rated speed rpm : 1580 guide sleeve travel mm : 9.70 Tolerance mm : + 0.20	rack travel mm : 0.55 Tolerance mm : + 0.45 Rated speed rpm : 1725
Rated speed rpm : 1450 guide sleeve travel mm : 8.50 Tolerance mm : + 0.10	LOW IDLE
Rated speed rpm : 550 guide sleeve travel mm : 3.70 Tolerance mm : + 0.30	control lever position degree : 68.0 tolerance degree : + 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring Rated speed rpm : 100
control lever position degree : 1	CRT mm min. :> 8.50
Rated speed rpm : 1480	Testing:
Rack travel in mm : 16.50 Tolerance mm : + 1.30	Rated speed rpm : 300 rack travel mm : 6.95 Tolerance mm : + 0.05
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00
Rated speed rpm : 1000	+

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:		550
Pressure hPa	:		505
rack travel mm	:		11.45
Tolerance mm	:	+-	0.05

Rated speed rpm	:	550
Pressure hPa	:	-
rack travel mm	:	10.15
Tolerance mm	: +	- 0.05

MEASUREMENT

Rated	speed	rpm	:	550
-------	-------	-----	---	-----

Pressure hPa	:		445
rack travel mm	:		11.25
Tolerance mm	:	+-	0.05

Pressure hPa	:	310
rack travel mm	:	10.40
Tolerance mm	: +	- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa	:	_
Rated speed rpm	:	1000
Del. quantity		
7/4000 -+line		74

76.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

: + 13.0 cm3/1000s.

LOW IDLE

Rated speed rpm	:	300	
Rack travel in mm Tolerance mm Del. quantity	: : +-	6.95 0.05	
cm3/1000 strokes	:	18.0	
Tolerance cm3/1000 strokes Check tolerance	: +	2.0	
cm3/1000S. Spreed	: +-	4.5	
Tolerance	:	3.5	
cm3/1000s.	:	5.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.08.90 Test oil : ISO 4113

Combination No. : 0 403 446 153

Injection pump

Pump designation : PES6MW100/320RS1119

: -1

EP type number : 0 413 406 114

Governor

Governer design. : RQV300...1400MW57-1

Governer no. : 0 420 083 079

Cust. part No. :

Customer-spec. information

Customer : VOLVO

Motor : TD 61..3012

Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40Tolerance °C : + 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.15
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

BASIC SETTING

Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 6.0

		+	Aneroid pressure
Rated speed rpm	: 300	Ī	hPa Del. quantity cm3/1000 strokes
Rack travel in mm	: 6.35	Ţ	Tolerance
Tolerance mm	: +- 0.05	+	cm3/1000 strokes
Del. quantity		+	Check tolerance
cm3/1000 strokes	: 18.0	+	cm3/1000s.
Tolerance	. 20	†	Spreed
cm3/1000 strokes Check tolerance	: + 2.0	Ī	Tolerance cm3/1000 strokes
cm3/1000s.	: + 4.5	I	Check tolerance
Spreed	4.5	1	cm3/1000s.
Tolerance		+	
cm3/1000 strokes	: 3.5	+	
Check tolerance		+	
cm3/1000s.	: 5.5	‡	CONTROL LEVER
		1	control lever
(B) SETTING OF IN	JECTION PUMP	+	position degree
WITH GOVERNOR		İ	tolerance degree
			RATED SPEED
GUIDE SLEEVE TRAV	EL	+	rack travel mm
	4.50	+	Rated speed rpm
Rated speed rpm	: 1450	†	Tolerance 1/min
guide sleeve travel mm	: 8.50	I	rack travel mm
Tolerance mm	: + 0.10	I	Rated speed rpm
rocer arice inti	0.10	1	Tolerance 1/min
Rated speed rpm	: 300	+	
guide sleeve		+	rack travel mm
travel mm	: 1.40	+	Tolerance mm
Tolerance mm	: +- 0.20	İ	Rated speed rpm
Rated speed rpm	: 550	1	
guide sleeve		+	
travel mm	: 3.70	+	
Tolerance mm	: ← 0.30	+	LOW IDLE
Rated speed rpm	• 1580	‡	
guide sleeve	. 1500	1	control lever
travel mm	: 9.70	+	position degree
Tolerance mm	: ← 0.20	+	tolerance degree
		‡	Setting point w/ou
GUIDE SLEEVE POSI	TION	+	
		‡	Rated speed rpm
control lever		+	CRT mm min.
position degree		+	
Rated speed rpm	: 1480	†	Testing:
Rack travel in mm	: 16.50	I	Rated speed rpm
Tolerance mm	: + 1.30	1	rack travel mm
		+	Tolerance mm
		- +	
FULL LOAD DELIVER	Y AT FULL LOAD STOP	+	

: 1000

: 105.0

: + 1.0

: +- 3.0

: 3.5

: 6.0

Rated speed rpm : 1000

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 615
rack travel mm : 12.05
Tolerance mm : + 0.05

Rated speed rpm : 550
Pressure hPa : rack travel mm : 10.15
Tolerance mm : +- 0.05

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 525 rack travel mm : 11.85 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : - Rated speed rpm : 1000

Rated speed rpm : Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity

duantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : \leftarrow 13.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.35
Tolerance mm : + 0.05
Del. quantity

cm3/1000 strokes : 18.0 Tolerance

cm3/1000 strokes : + 2.0 Check tolerance

cm3/1000s. : +- 4.5 Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 5.5